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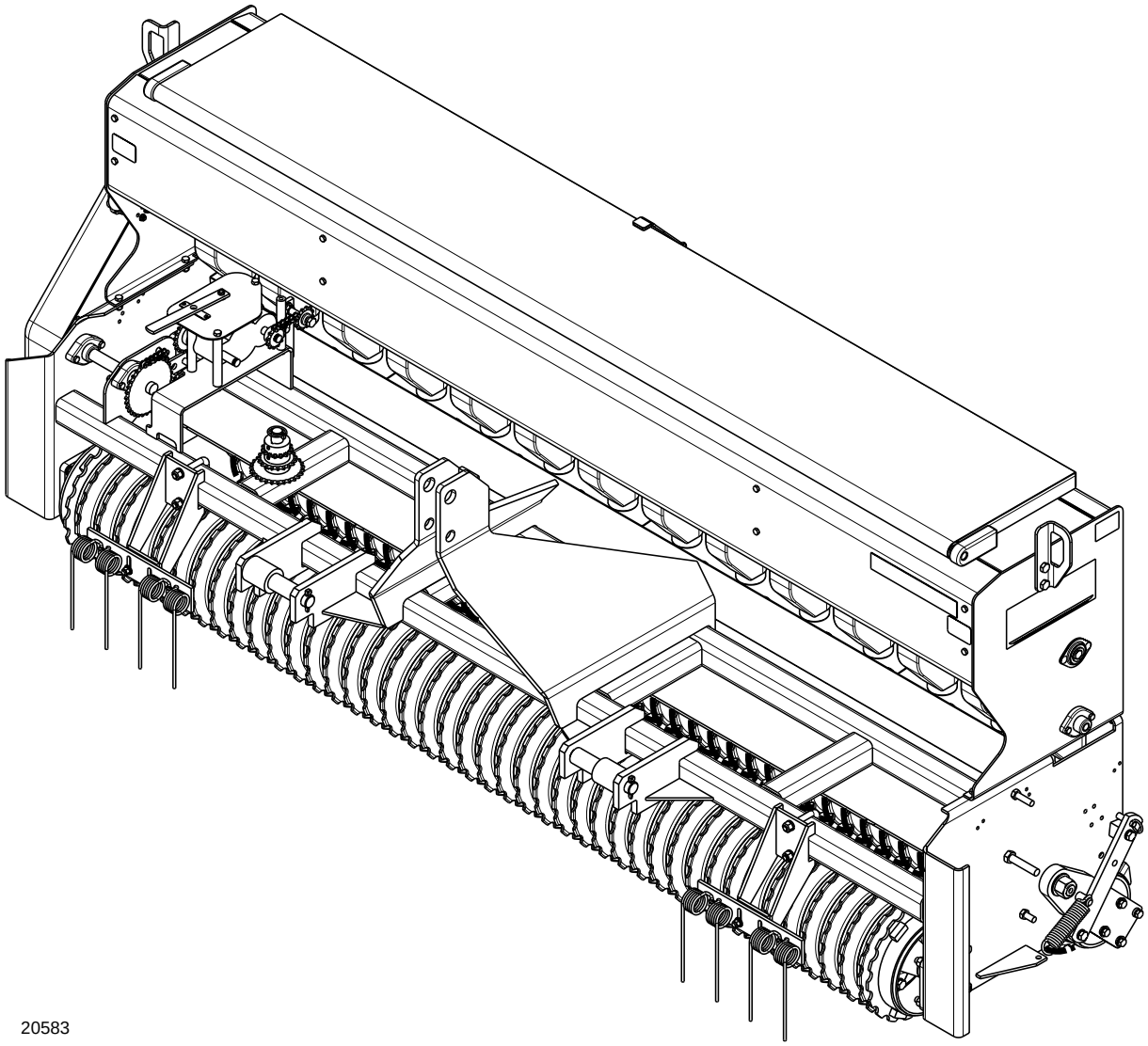
Primary Seeders

PSN2096



20583

313-306M

Operator's Manual

Read the Operator's manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

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Cover photo may show optional equipment not supplied with standard unit.

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Printed in the United States of America.

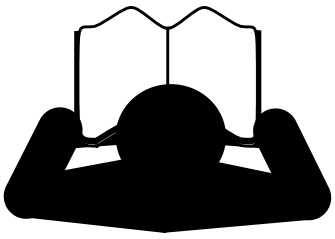
These are common practices that may or may not be applicable to the products described in this manual.

Safety at All Times

Thoroughly read and understand the instructions given in this manual before operation. Refer to the "Safety Label" section, read all instructions noted on them.

Do not allow anyone to operate this equipment who has not fully read and comprehended this manual and who has not been properly trained in the safe operation of the equipment.

- ▲ Operator should be familiar with all functions of the unit.
- ▲ Operate implement from the driver's seat only.
- ▲ Make sure all guards and shields are in place and secured before operating implement.
- ▲ Do not leave tractor or implement unattended with engine running.
- ▲ Dismounting from a moving tractor could cause serious injury or death.
- ▲ Do not stand between tractor and implement during hitching.
- ▲ Keep hands, feet, and clothing away from power-driven parts.
- ▲ Wear snug fitting clothing to avoid entanglement with moving parts.
- ▲ Watch out for wires, trees, etc., when raising implement. Make sure all persons are clear of working area.
- ▲ Turning tractor too tight may cause implement to ride up on wheels. This could result in injury or equipment damage.



Look For The Safety Alert Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

Be Aware of Signal Words

A Signal word designates a degree or level of hazard seriousness. The signal words are:

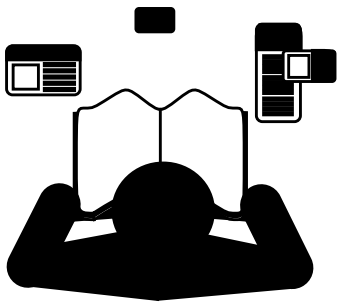
DANGER
Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION
Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

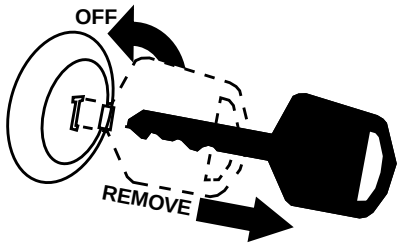
For Your Protection

- ▲ Thoroughly read and understand the "Safety Label" section, read all instructions noted on them.



Shutdown and Storage

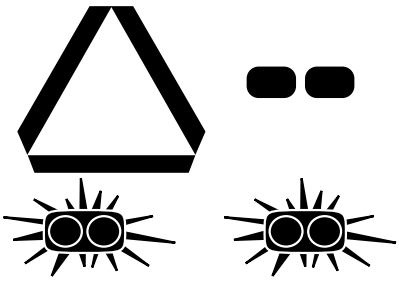
- ▲ Lower machine to ground, put tractor in park, turn off engine, and remove the key.
- ▲ Detach and store implements in a area where children normally do not play. Secure implement by using blocks and supports.



These are common practices that may or may not be applicable to the products described in this manual.

Use Safety Lights and Devices

- ▲ Slow moving tractors, self-propelled equipment, and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.
- ▲ Flashing warning lights and turn signals are recommended whenever driving on public roads. Use lights and devices provided with implement.

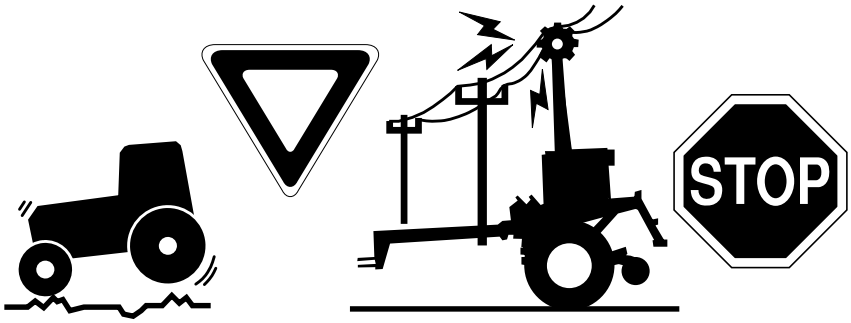


Transport Machinery Safely

- ▲ Comply with state and local laws.
- ▲ Maximum transport speed for implement is 20 mph. DO NOT EXCEED. Never travel at a speed which does not allow adequate control of steering and stopping. Some rough terrain require a slower speed.
- ▲ Sudden braking can cause a towed load to swerve and upset. Reduce speed if towed load is not equipped with brakes.
- ▲ Use the following maximum speed - tow load weight ratios as a guideline:

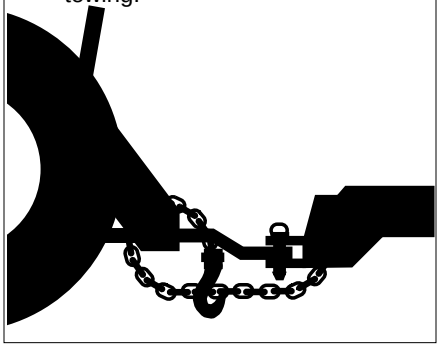
  20 mph when weight is less than or equal to the weight of tractor.

  10 mph when weight is double the weight of tractor.
- ▲ **IMPORTANT:** Do not tow a load that is more than double the weight of tractor.



Use A Safety Chain

- ▲ A safety chain will help control drawn machinery should it separate from the tractor drawbar.
- ▲ Use a chain with the strength rating equal to or greater than the gross weight of the towed machinery.
- ▲ Attach the chain to the tractor drawbar support or other specified anchor location. Allow only enough slack in the chain to permit turning.
- ▲ Do not use safety chain for towing.



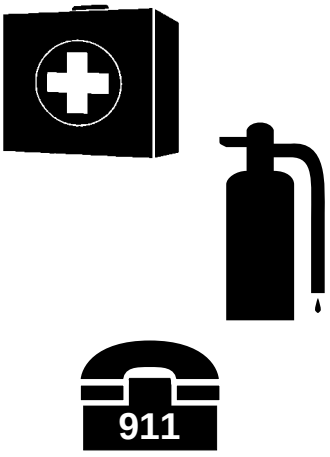
Practice Safe Maintenance

- ▲ Understand procedure before doing work. Use proper tools and equipment, refer to Operator's Manual for additional information.
- ▲ Work in a clean dry area.
- ▲ Lower the implement to the ground, put tractor in park, turn off engine, and remove key before performing maintenance.
- ▲ Allow implement to cool completely.
- ▲ Do not grease or oil implement while it is in operation.
- ▲ Inspect all parts. Make sure parts are in good condition & installed properly.
- ▲ Remove buildup of grease, oil or debris.
- ▲ Remove all tools and unused parts from implement before operation.

These are common practices that may or may not be applicable to the products described in this manual.

Prepare for Emergencies

- ▲ Be prepared if a fire starts.
- ▲ Keep a first aid kit and fire extinguisher handy.
- ▲ Keep emergency numbers for doctor, ambulance, hospital and fire department near phone.



Wear Protective Equipment

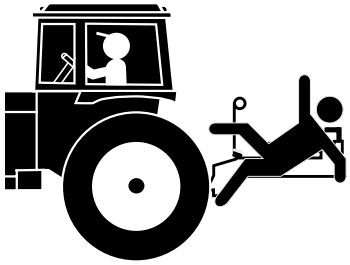
- ▲ Protective clothing and equipment should be worn.
- ▲ Wear clothing and equipment appropriate for the job. Avoid loose fitting clothing.
- ▲ Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- ▲ Operating equipment safely requires the full attention of the operator. Avoid wearing radio headphones while operating machinery.

Avoid High Pressure Fluids Hazard

- ▲ Escaping fluid under pressure can penetrate the skin causing serious injury.
- ▲ Avoid the hazard by relieving pressure before disconnecting hydraulic lines or performing work on the system.
- ▲ Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- ▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- ▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- ▲ If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be treated within a few hours or gangrene may result.

Keep Riders Off Machinery

- ▲ Riders obstruct the operator's view, they could be struck by foreign objects or thrown from the machine.
- ▲ Never allow children to operate equipment.



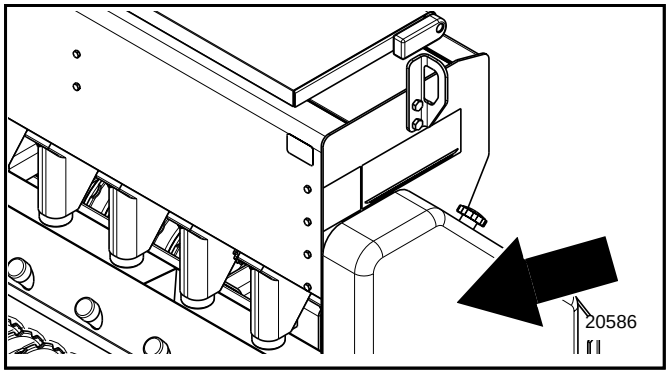
Handle Chemicals Properly

- ▲ Protective clothing should be worn.
- ▲ Handle all chemicals with care.
- ▲ Follow instructions on container label.
- ▲ Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil, and property.
- ▲ Inhaling smoke from any type of chemical fire is a serious health hazard.
- ▲ Store or dispose of unused chemicals as specified by the chemical manufacturer.

Safety Labels

Your Primary Seeder comes equipped with all safety labels in place. They were designed to help you safely operate your implement. Read and follow their directions.

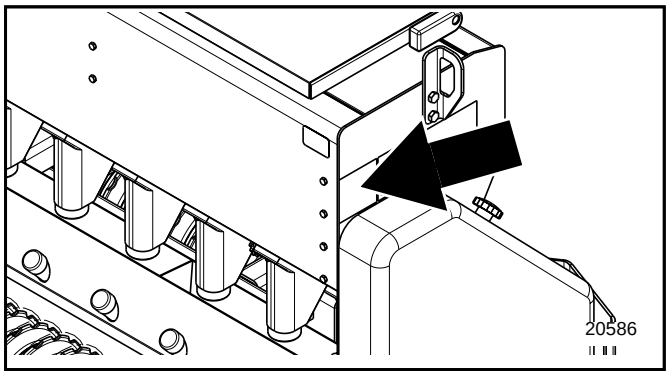
1. *Keep all safety labels clean and legible.*
2. *Replace all damaged or missing labels. To order new labels go to your nearest Land Pride dealer or visit our dealer locator at landpride.com.*
3. *Some new equipment installed during repair requires safety labels to be affixed to the replaced component as specified by Land Pride. When ordering new components make sure the correct safety labels are included in the request.*
4. *Refer to this section for proper label placement.*
   To install new labels:
   a. *Clean the area the label is to be placed.*
   b. *Spray soapy water on the surface where the label is to be placed.*
   c. *Peel backing from label. Press firmly onto the surface.*
   d. *Squeeze out air bubbles with the edge of a credit card.*



DANGER
GUARD MISSING
When this is visible
DO NOT OPERATE
ENTANGLEMENT HAZARD
can cause Serious Injury or Death
Si no entiende ingles, se prefiere que busque a alquien que interprete las instrucciones para usted.
PHDC 6

818-543C

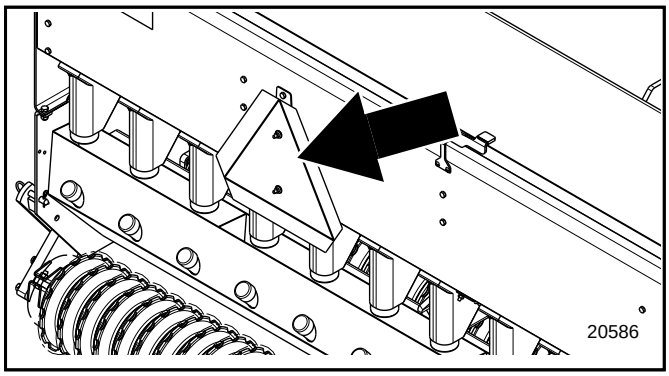
DANGER: Guard Missing (Beneath Guard)

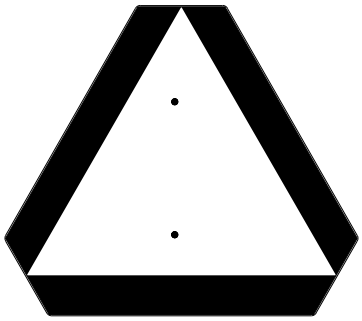


DANGER
To Prevent Serious Injury Or Death From Moving Parts:
KEEP AWAY, Moving parts can crush and dismember.
Do not operate without guards and shields in place.
Disconnect and lockout power source before adjusting and servicing.
SW108

838-111C

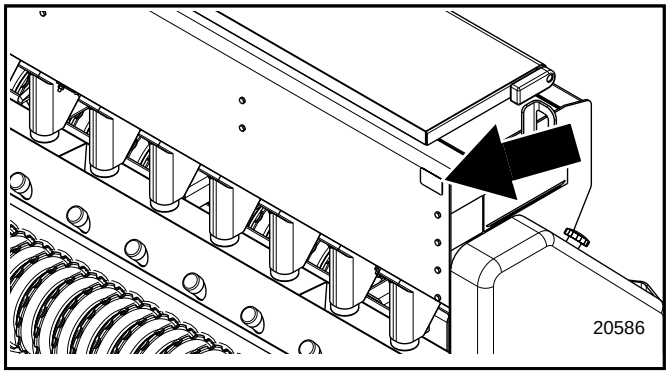
DANGER: Keep away, Moving Parts





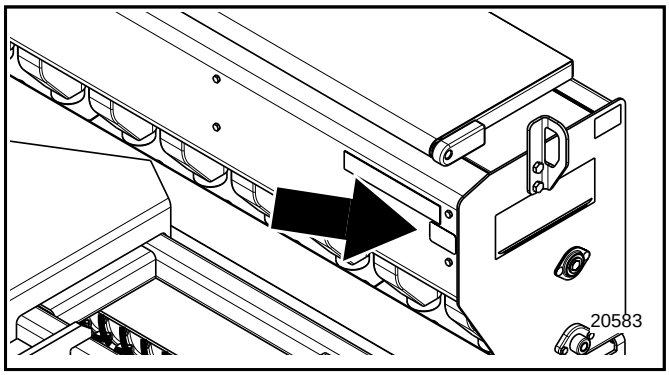
818-055C

SMV: Slow Moving Vehicle



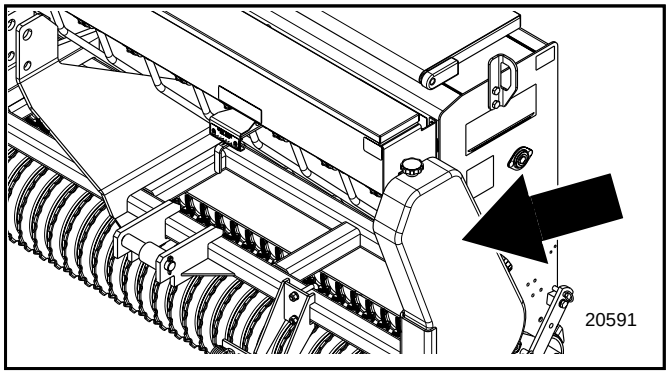
818-230C

Red Reflector



818-229C

Amber Reflector

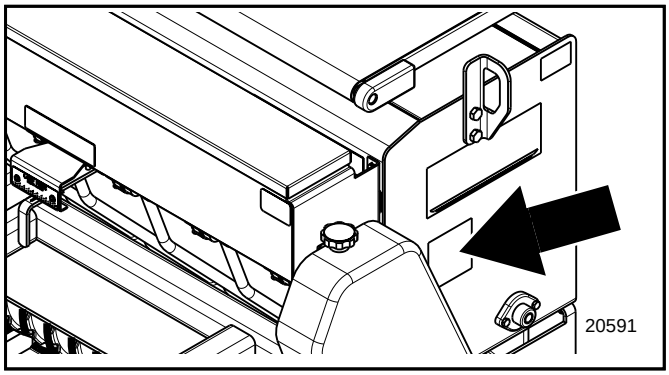


DANGER
GUARD MISSING
When this is visible
DO NOT OPERATE
ENTANGLEMENT HAZARD
can cause Serious Injury or Death
Si no entiende ingles, se prefiere que busque a alquien que interprete las instrucciones para usted.
PHDC 6

818-543C

Small Grass Seed Option

DANGER: Guard Missing (Beneath Guard)

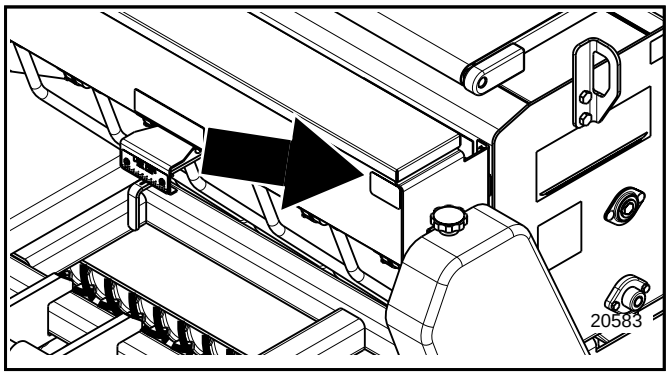


DANGER
To Prevent Serious Injury Or Death From Moving Parts:
KEEP AWAY, Moving parts can crush and dismember.
Do not operate without guards and shields in place.
Disconnect and lockout power source before adjusting and servicing.
SW106

838-111C

Small Grass Seed Option

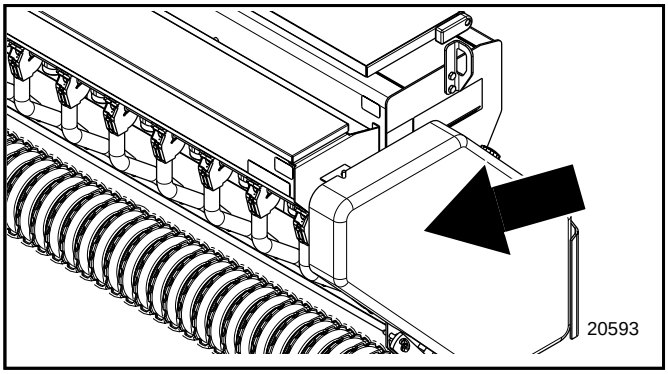
DANGER: Keep away, Moving Parts



818-229C

Small Grass Seed Option

Amber Reflector

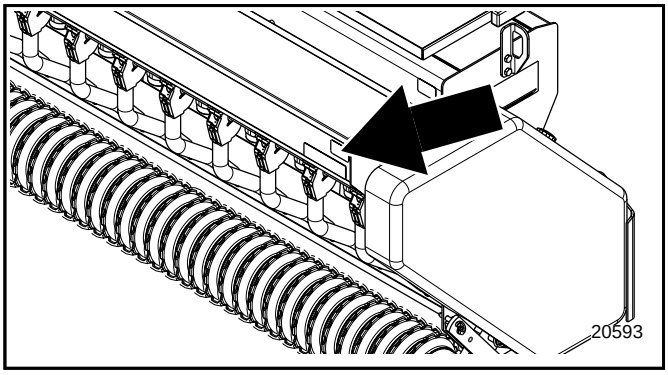


DANGER
GUARD MISSING
When this is visible
DO NOT OPERATE
ENTANGLEMENT HAZARD
can cause Serious Injury or Death
Si no entiende ingles, se prefiere que busque a alguien que interprete las instrucciones para usted.
PHDC 6

818-543C

Standard Seed Option

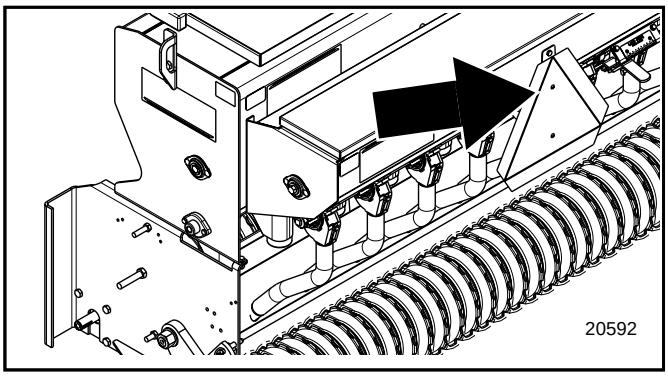
DANGER: Guard Missing (Beneath Guard)

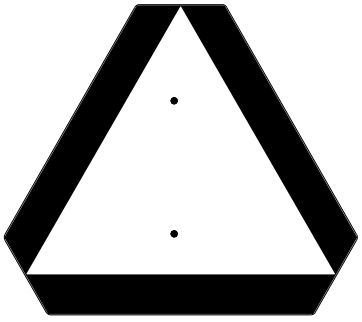


818-230C

Standard Seed Option

Red Reflector





818-055C

Standard Seed Option

SMV: Slow Moving Vehicle

Land Pride welcomes you to the growing family of new product owners.

This Primary Seeder has been designed with care and built by skilled workers using quality materials. Proper assembly, maintenance, and safe operating practices will help you get years of satisfactory use from the Primary Seeder.

Application

The PSN2096 Primary Seeder is ideal for landscaping, sod farms, grain farms or highway reclamation work. You can seed Alfalfa, nearly all types of Native Grass and most types of turfgrass with this seeder. If the majority of your seeding is done with Native Grass or “fluffy” seeds like Big Blue Stem, Indian Grass or Side Oats Grama, the main seedbox on the PSN2096 is equipped with an aggressive picker wheel feed design to keep seed moving allows for consistent seeding rates.

By utilizing smaller bushel boxes added to the main box, it is possible to seed three different types of seed at different rates. A 4.8 bushel box can be added to the Native Grass Box and is equipped with our standard fluted seed cups and agitation to seed most turf type grasses, as well as a variety of other seeds from peas to alfalfa. An optional Small Seeds Box can be used for seeds such as alfalfa, clover and other types of small seeds. See **“Features and Benefits”**, **“Section 6”** for additional information.

Using This Manual

- This Operator’s Manual is designed to help familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.
- The information contained within this manual was current at the time of printing. Some parts may change slightly to assure you of the best performance.
- To order a new Operator’s or Parts Manual contact your authorized dealer. Manuals can also be downloaded, free-of-charge from our website at www.landpride.com or printed from the Land Pride Service & Support Center which is already at your dealership.

Terminology

“Right” or “Left” as used in this manual is determined by facing the direction the machine will operate while in use unless otherwise stated.

Definitions

NOTE: A special point of information that the operator must be aware of before continuing.

IMPORTANT: A special point of information related to its preceding topic. Land Pride’s intention is that this information should be read and noted before continuing.

Owner Assistance

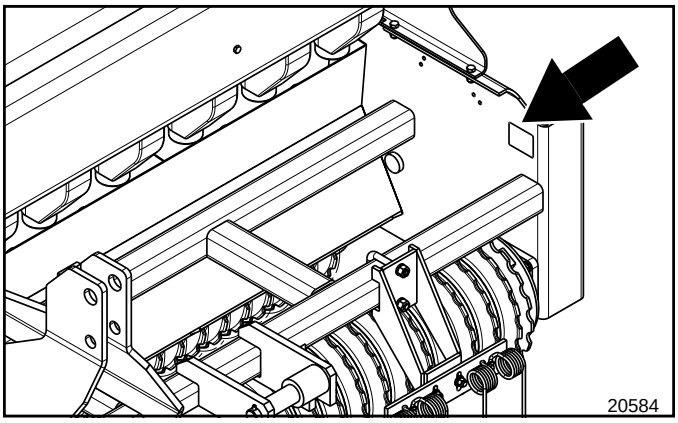
The Warranty Registration card should be filled out by the dealer at the time of purchase. This information is necessary to provide you with quality customer service.

If customer service or repair parts are required contact a Land Pride dealer. A dealer has trained personnel, repair parts and equipment needed to service the implement.

The parts on your PSN2096 Primary Seeder have been specially designed and should only be replaced with genuine Land Pride parts. Therefore, should your Primary Seeder require replacement parts go to your Land Pride Dealer.

Serial Number Plate

For prompt service always use the serial number and model number when ordering parts from your Land Pride dealer. Be sure to include your serial and model numbers in correspondence also. Refer to Figure 1 for the location of your serial number plate.



Serial Number Plate Location
Figure 1

Further Assistance

Your dealer wants you to be satisfied with your new Primary Seeder. If for any reason you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

1. Discuss the matter with your dealership service manager making sure he is aware of any problems you may have and that he has had the opportunity to assist you.
2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the problem and request assistance.
3. For further assistance write to:

Land Pride
Service Department
P.O. Box 5060
Salina, KS 67402-5060

E-mail address
lpservicedept@landpride.com

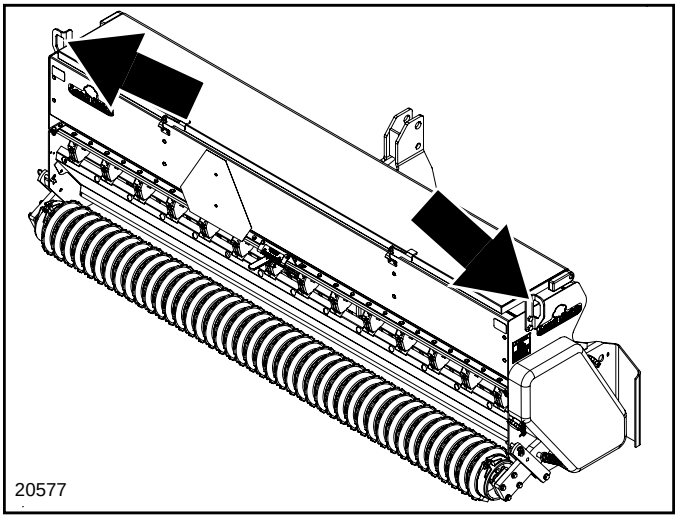
Pre-Assembly Checklist

	Check	Reference
☐	All major frame components.	Operator's Manual
☐	Fasteners and pins that were shipped with the seeder. **NOTE:** All hardware from the factory has been installed in the location where it will be used. If a part or fastener is temporarily removed for assembly reasons, remember where it goes. Keep the parts separated.	Operator's Manual
☐	All working parts are moving freely, bolts are tight and cotter pins are spread.	Operator's Manual
☐	If a pin, bolt or other part has been removed, and you are unsure where it is used, refer to the Parts Manual to identify it. Be sure the part gets used in the correct location. By double checking while you assemble, you will lessen the chance of using a bolt incorrectly that may be needed later.	Parts Manual
☐	All grease fittings are in place and lubricated.	Section 4 Page 25
☐	Safety decals are correctly located and legible. Replace if damaged.	Important Safety Information

Sling Bracket

Refer to Figure 1-1:

The sling brackets allow points at each end to hook the chain for lifting of the unit.



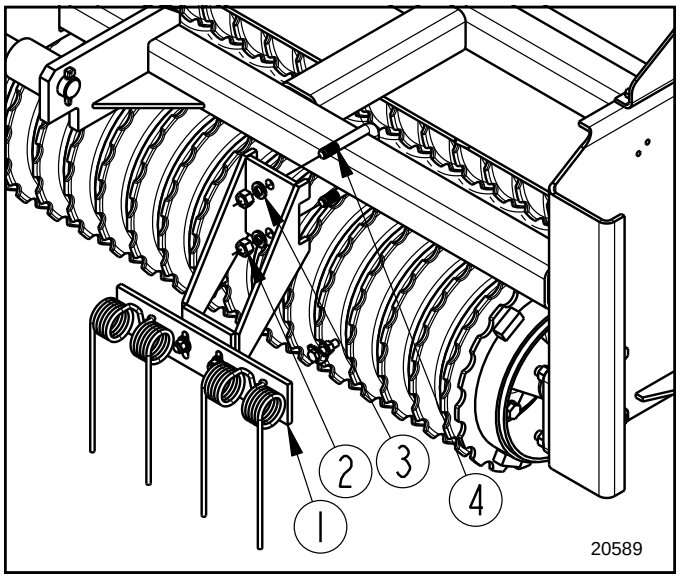
Sling Bracket
Figure 1-1

Tire Track Remover Assembly

The Tire Track Removers are assembled 180 degrees from their operating position for shipping purposes.

Refer to Figure 1-2:

1. Remove Track Remover (#1).
2. Flip Track Remover over 180 degrees and reassemble as shown with 1/2" u-bolt (#4), lock washer (#3) and nut (#2).



Tire Track Remover
Figure 1-2

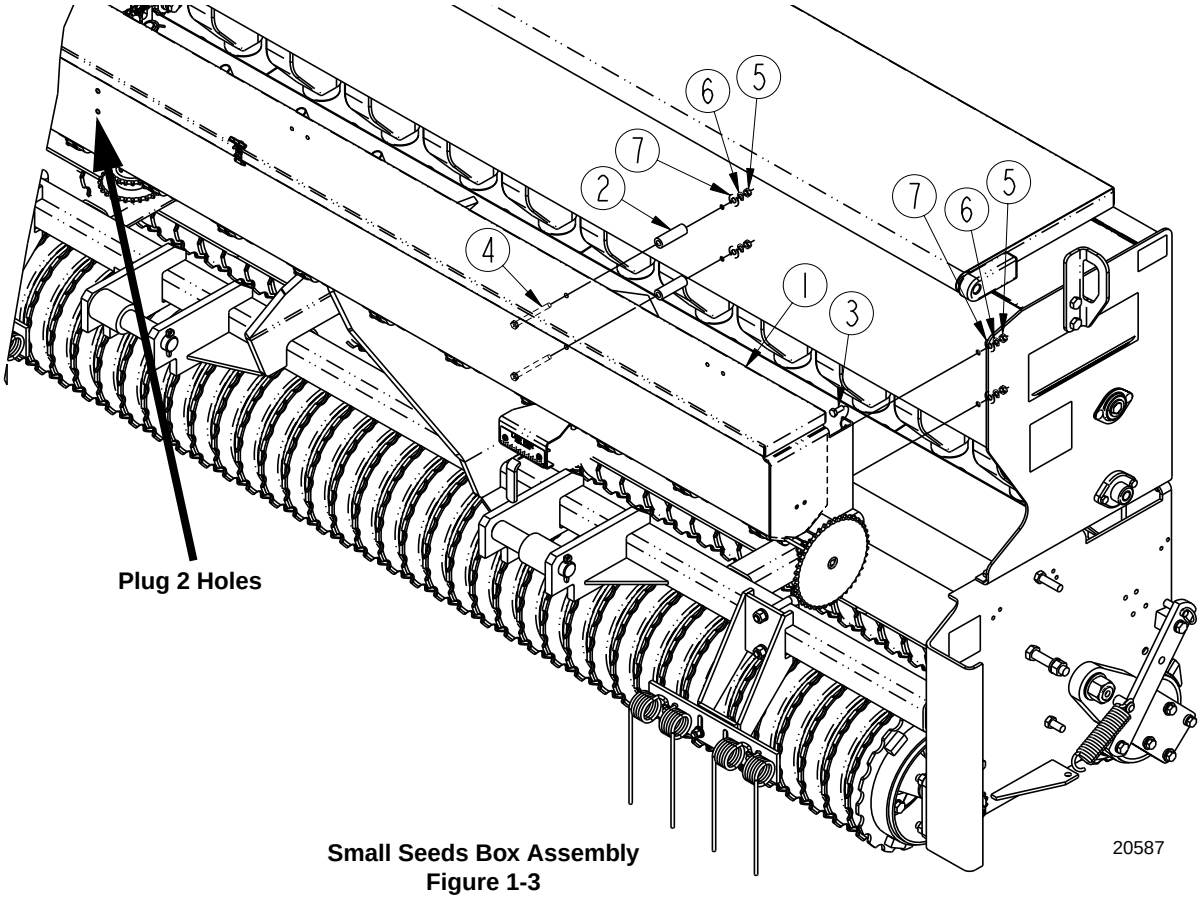
Small Seeds Box Dealer Installation

Small Seeds Box Assembly

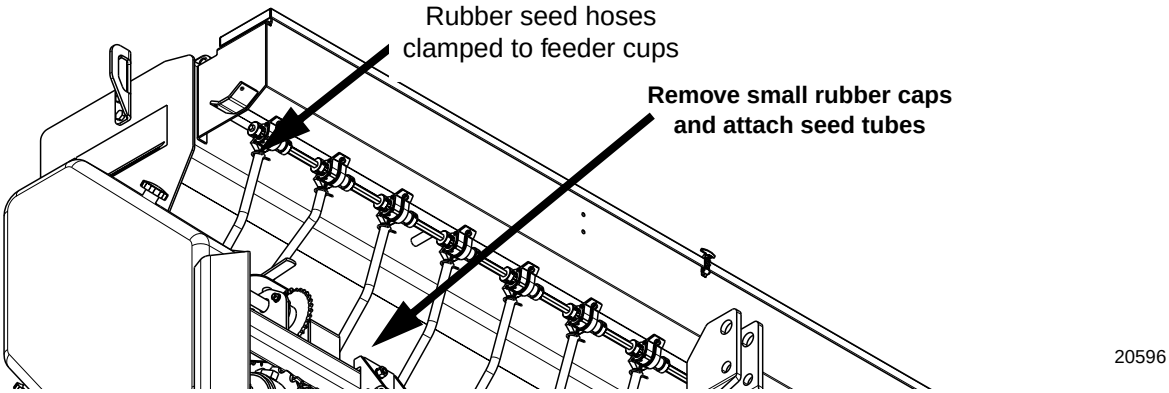
1. Remove the eight bolts, lock washers and nuts that are assembled in the front of the main box. Retain two bolts, lock washers and nuts and use these to plug the two holes in the front of the Small Seeds Box.

Refer to Figure 1-3:

2. Assemble the Small Seeds Box (#1) at the ends with the four 5/16” bolts (#3), flat washers (#7), lock washers (#6) and nuts (#5). Do not tighten until spacers (step 3) are installed.
3. Align the four box spacers (#2) to the inner holes of the Small Seeds Box and the main box and assemble the four longer 5/16” bolts (#4), flat washers (#7), lock washers (#6) and nuts (#5).
4. Refer to Figure 1-4. Remove small rubber caps attached to the small tubes on the seeder. Attach the rubber seed tubes to the feeder cups with the clamps provided and then to the small tubes in the seeder with no clamp. Trim rubber hoses as required to remove any excess slack.



Small Seeds Box Assembly
Figure 1-3

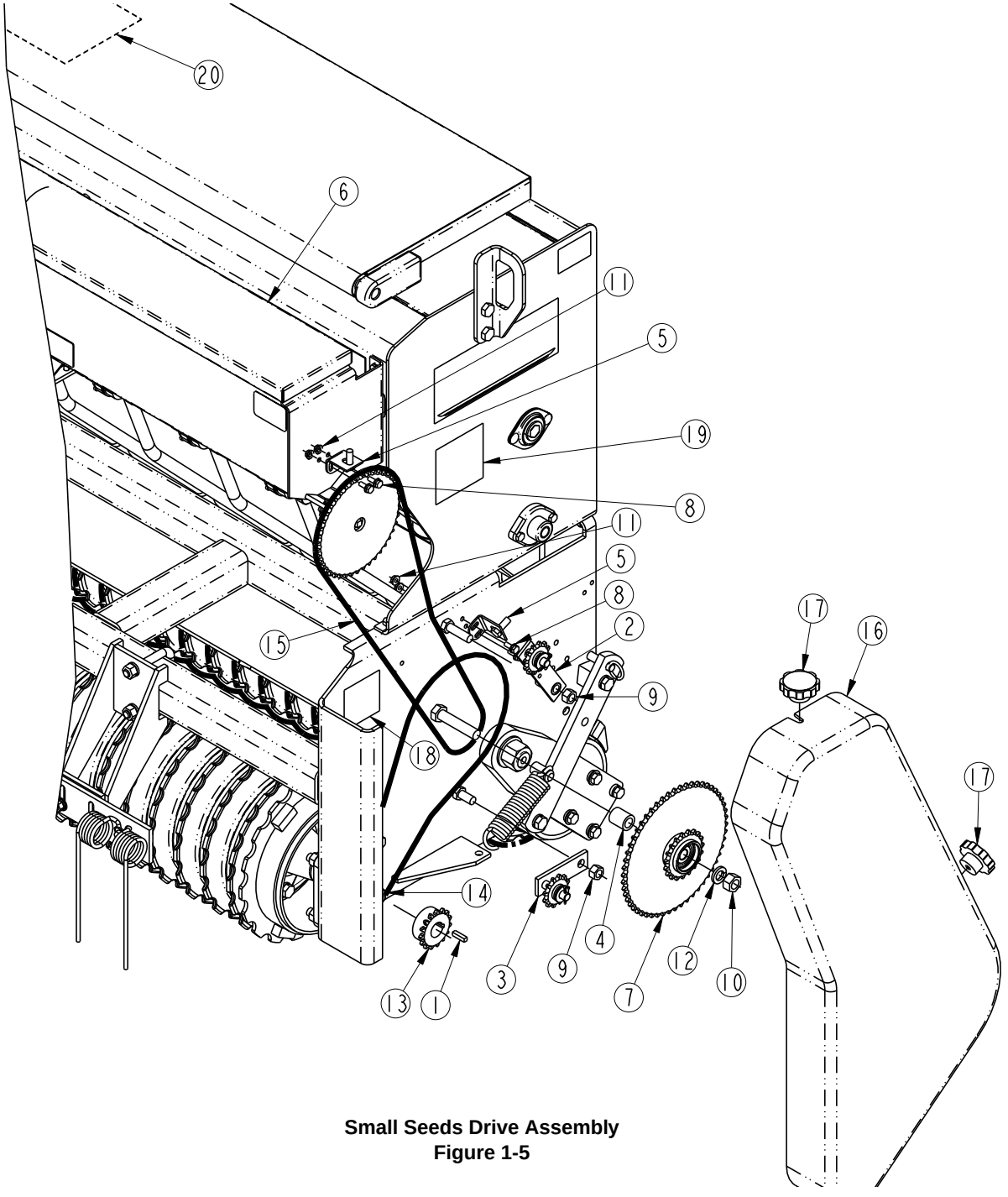


Small Seeds Tube Assembly
Figure 1-4

Small Seeds Drive Assembly

Refer to Figure 1-5:

1. Place decal **"Danger Guard Missing**" (#18), **"Danger Moving Parts**" (#19) and **"Seed Rate Chart"** (#20) in locations shown.
2. Assemble chain guard mounts (#5) with the 1/4" flange bolts (#8) and flange nuts (#11). Do not tighten until the complete drive has been assembled and the chain guard (#16) installs properly. The chain guard mounts are slotted for easier chain guard mounting.
3. Install chain idler with welded on spacer (#2) and chain idler (#3) with 1/2" nut (#9).
4. Assemble the spacer (#4) and speed change sprocket assembly (#7) to the 5/8" welded on bolt with the 5/8" lock washer (#12) and nut (#10).
5. Assemble the front roller sprocket (#13) and key (#1) to the front roller shaft.
6. Install chain (#14) first and then chain (#15). Tighten chains with idlers (#2) and (#3).
7. Assemble chain guard (#16). Position chain guard mounts (#5) where needed and tighten hardware.

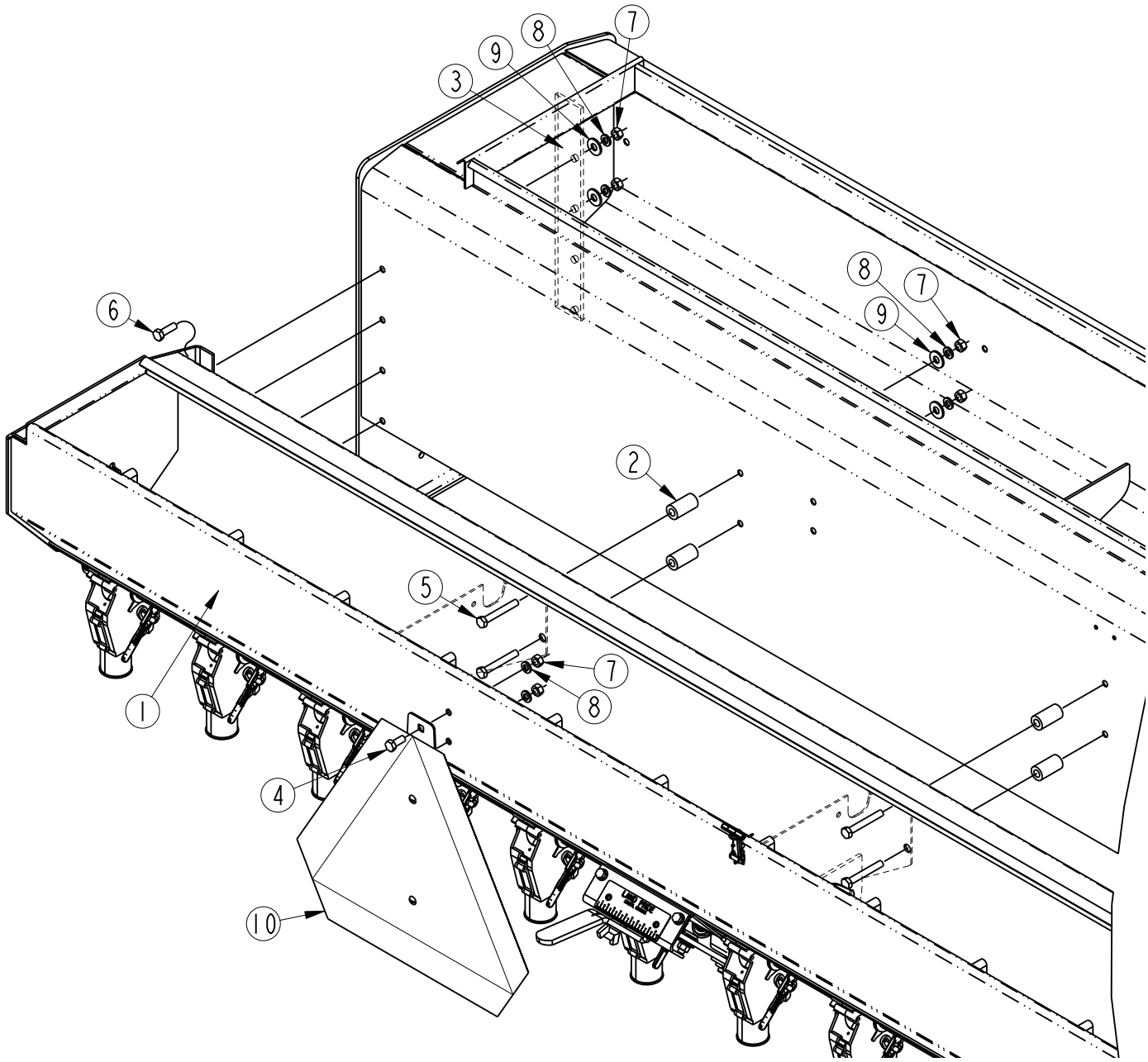


Small Seeds Drive Assembly
Figure 1-5

Standard Seeds Box Assembly

Refer to Figure 1-6:

1. Remove the SMV (#10) and SMV mounting bracket from the main box.
2. Remove the 14 bolts, lock washers and nuts that are assembled in the rear of the main box. Retain two bolts, lock washers and nuts and use these to plug the two holes in the rear of the Standard Seed Box where the SMV was removed.
3. Assemble the Standard Seed Box Assembly (#1) at the ends with the eight 5/16" bolts (#6), backing plates (#3), flat washers (#9), lock washers (#8) and nuts (#7). Do not tighten until spacers (#2) (step 4) are assembled.
4. Align the six box spacers (#2) to the inner holes of the Standard Seed Box and the main box and assemble the four longer 5/16" bolts (#5), flat washers (#9), lock washers (#8) and nuts (#7).
5. Remove larger rubber caps attached to the tubes on the seeder. Attach the rubber seed tubes to the feeder cups and then to the tubes in the seeder.
6. Install SMV (#10) with SMV mounting bracket to Standard Seed Box Assembly (#1).

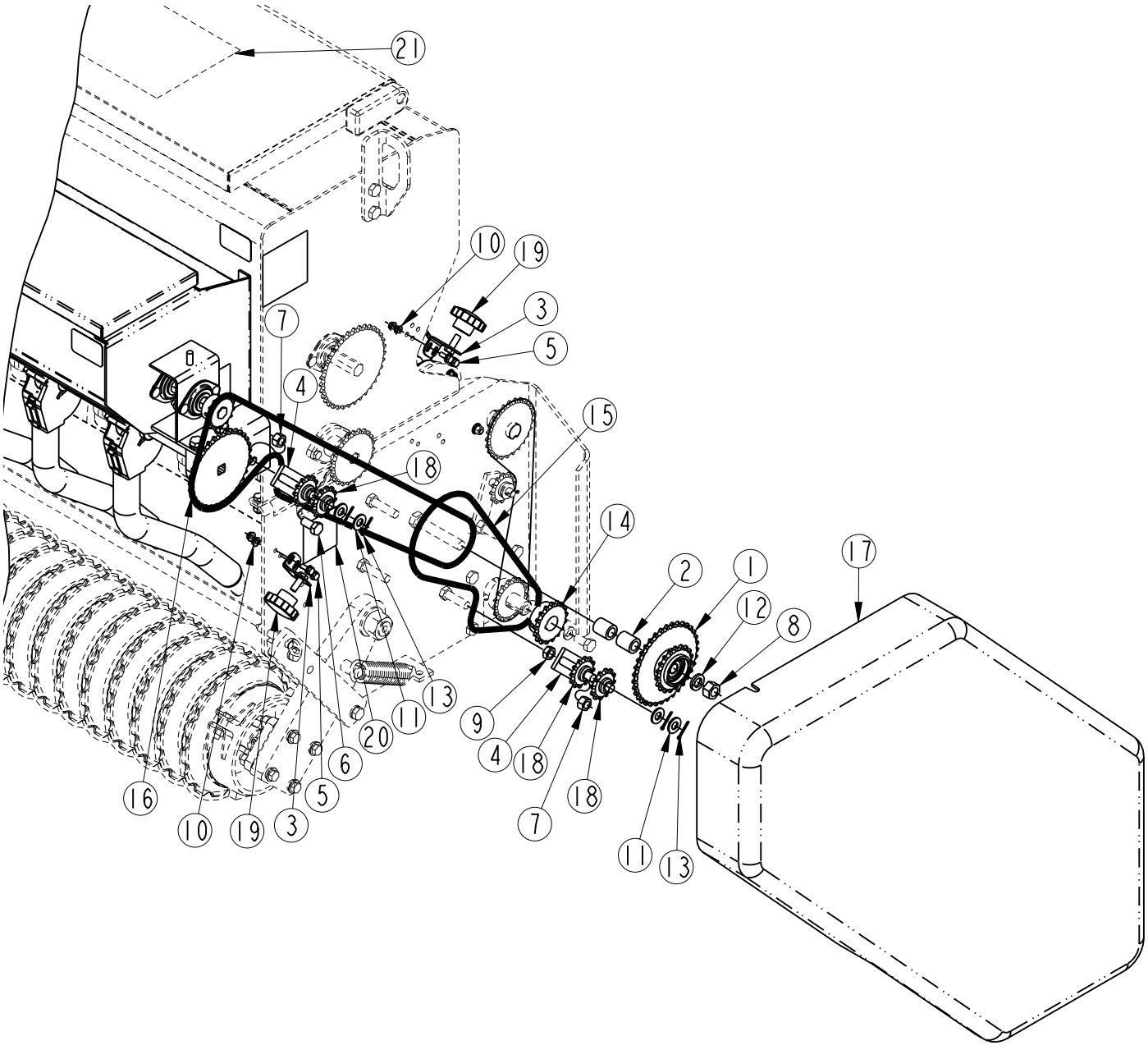


Standard Seeds Box Assembly
Figure 1-6

Standard Seeds Drive Assembly

Refer to Figure 1-7:

1. Place decal **"Danger Guard Missing**" (#20) and **"Seed Rate Chart"** (#21) in locations shown.
2. Assemble chain guard mounts (#3) with the 1/4" flange bolts (#5) and flange nuts (#10). Do not tighten until the complete drive has been assembled and the chain guard (#17) installs properly. The chain guard mounts are slotted for easier chain guard mounting.
3. Install 1/2" jam nut (#9) first and then lower chain idler (#4) and nut (#7). Install upper chain idler (#4) with 1/2"bolt (#6) and nut.
4. Assemble idler sprockets (#18) to idlers. Secure with 1/2" flat washers (#11) and cotter pins (#13).
5. Assemble the spacers (#2) and speed change sprocket assembly (#1) to the 5/8" welded on bolt with the 5/8" lock washer (#12) and nut (#8), determine which drive type required. See "Seed Rate Speed Change" page 18.
6. Assemble the sprocket (#14) with existing bolt and lock washer as shown.
7. Install chain (#16) first and then chain (#15). Adjust chain tension with Idlers.
8. Assemble chain guard (#17). Position chain guard mounts (#3) where needed and tighten hardware.



Standard Seeds Drive Assembly 20605
Figure 1-7

Pull Tongue Hook-Up

Refer to Figure 1-8:

The lower link handles should be in the down position before preceding.

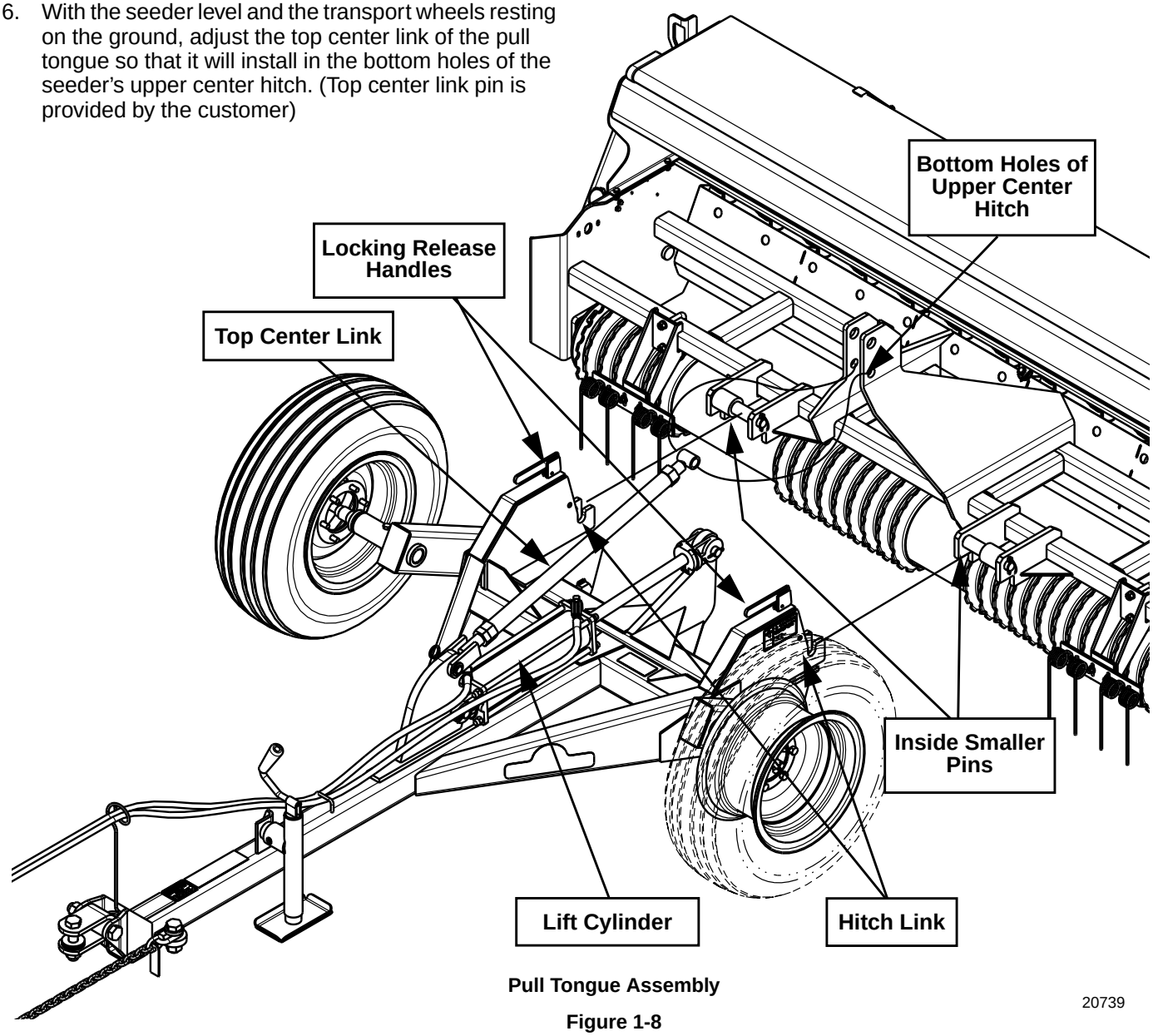
1. Mount Pull Tongue to tractor drawbar and secure with safety chain.
2. Connect hydraulic hoses to tractor.
3. Fully extend the lift cylinder to rase the transport wheels and lower the hitch links.
4. Back the pull tongue up to the seeder to align the hitch links with the seeder's inside smaller pins.
5. Retract the lift cylinder to rase the hitch links up around the seeder's inside smaller pins until the pins lock into the lower hitch links. Once the pins are locked in, adjust the lift cylinder up or down as needed to level the seeder.
6. With the seeder level and the transport wheels resting on the ground, adjust the top center link of the pull tongue so that it will install in the bottom holes of the seeder's upper center hitch. (Top center link pin is provided by the customer)

Pull Tongue Disconnect

CAUTION

The seeder will have negative tongue weight when it is lifted off the ground. Lower the seeder to the ground before proceeding with Pull Tongue disconnect. (Negative tongue weight is when most of the weight is to the rear of the implement causing the front of the tongue to be light and may rise up when disconnected.)

1. Remove top link pin.
2. Flip locking release handles up on pull tongue.
3. Fully extend lift cylinder to lower tongue until the hitch links are free from the seeders lower pins.



Pull Tongue Assembly

Figure 1-8

General Description

The following information is a brief description of how this Primary Seeder works. It is included to help you understand the operation of this seeder.

The power to drive the seeding function of this seeder comes from the ground speed of the tractor. The seed metering is powered by the front roller at a rate proportional to the distance driven. This ensures that the rate applied in pounds per acre or pounds per 1000 square feet remains constant as ground speed is varied. The power is transmitted via drive chains to the seed cups. This drive can be adjusted to a high or low range to broadcast more or less seed. The seed rate is adjustable using the seed rate lever located at the rear of the seeder. The seed is dropped between cast iron rollers. The front roller crushes clods, presses down small stones and forms a firm seedbed. The rear roller firms the soil around the seeds.

Operating Check List

In addition to design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training involved in its operation, transport, maintenance and storage of equipment. Before beginning to operate your Primary Seeder, the following inspection should be performed.

	Check	Reference
☐	Read and follow the "**Safety Rules**" carefully.	Important Safety Information
☐	Read all of the "**Tractor Hook-Up**" and preparation instructions.	Section 2 page 14
☐	**"Basic Operations"** in this Manual	Operator's Manual
☐	Lubricate the seeder as needed. Refer to "**Lubrication**"	Section 4 page 25
☐	Check the seeder initially and periodically for loose bolts & pins, "**Torque Values Chart**".	Section 8 page 31
☐	Make sure all guards and shields are in place.	Operator's Manual
☐	Check initially and periodically for loose bolts, pins, and chains.	Operator's Manual
☐	Inspect the seed cups and seed tubes for foreign matter.	Section 4 page 30
☐	Set speed change sprocket for drive type desired.	Section 3 page 17
☐	Set seed rate. See "**Seed Rate Charts**".	Section 3 page 17

Seeder Preparation

Before proceeding with the first time set-up, or before making any adjustments mentioned in this section, make every effort to attach the seeder to a tractor.

1. This seeder can be transported with a full box of seed. It is best not to do this unless necessary because the increased weight does increase the chances for problems on the road. Do not exceed 20 miles per hour.
2. Calibrate your seeder for a proper rate based on the seed you are using. Calibration information is located on the inside of your box lid or on page 17.
3. Make sure the seed cup door adjustment handle on each cup is set the same across the seeder.
4. Never allow anyone to ride on the seeder.
5. Maximum seeding speed will vary according to soil conditions.
6. Check that all plugs and caps have been replaced properly.
7. Be sure all bolts and nuts are tight.
8. Be certain all guards are in place and secure.
9. Clear the area to be seeded of rocks, branches and other foreign objects.
10. At first begin seeding at a slow forward speed and shift up until the desired speed is achieved.

Tractor Requirements

This Primary Seeder is designed for tractors with a 3-point. Category 2 or 3 and Cat. 2 Quick-Hitch. Check the tractor's 3-point lifting capacity. Refer to **"Section 6: Specifications and Capacities"** on Page 28 for seeder weight.

A Pull-Type hitch is available as an option. This Pull-Type Hitch can be used with smaller HP tractors, which may not have the necessary capacity to maneuver a 3-point configuration.

NOTE: In order to maintain steering control, ballast may have to be added to your tractor. To determine whether or not to add ballast, refer to your tractor Operator's Manual.

Tractor 3-Point Hook-Up

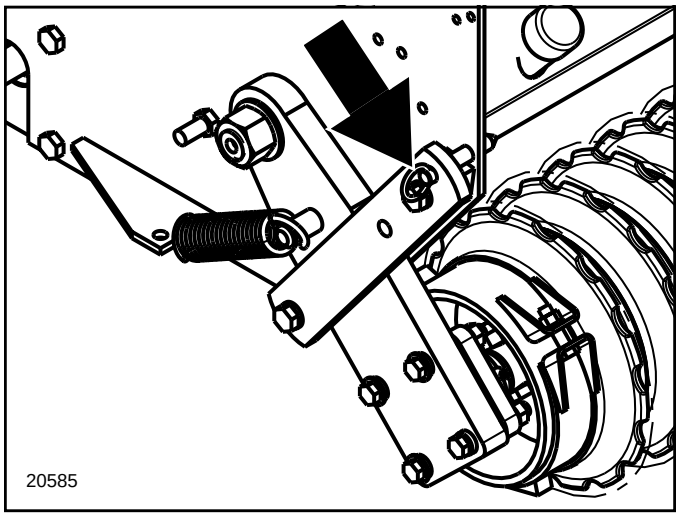
1. Back tractor up to seeder until 3-Point links are aligned with hitch clevises on seeder.
2. Secure the tractor's 3-Point lower arms to the lower hitch clevises using hitch pins supplied.
3. Secure tractor's top center link to the seeder top hitch using a 1" diameter hitch pin.
4. With the seeder resting on level ground, adjust the tractor's top link until the seeder is level.
5. Remove rear roller lock pin from parking position and place in storage position. Figure 2-1

Pull Tongue Hook-Up

1. See Section 1 page page 15 for a description of connecting a tractor to the pull tongue and seeder.

IMPORTANT: Always operate the seeder with the transport wheels on the ground and the seeder level to prevent dirt build-up and damage to the seeder.

2. At the field site, lower the seeder to the ground by raising the transport wheels until the seeder is resting on the ground. Transport wheels must also be resting on the ground to support some of the seeder's weight.
3. Set the tractor's hydraulic lever to return the lift cylinder to this position each time the seeder is raised and lowered.
4. With the seeder and transport wheels resting on level ground, readjust the pull tongue top center link to level the seeder if needed.
5. Remove rear roller lock pin from parking position and place in storage position. Refer to Figure 2-1



Rear Roller Pin in Field Position
Figure 2-1

CAUTION

Never back up with the seeder down. This will loosen the drive chain and possibly damage the seeder.

Seeding

Slowly lower the Primary Seeder to the ground with the tractor's hydraulics. Begin in a low gear as the full seeder can be a heavy load. Ground speed is determined based on safety, ground conditions and terrain. In most cases do not exceed 6 MPH. The seeding mechanism is ground driven. Therefore, seeding can be discontinued by raising the seeder off the ground with the 3-point lever before making a turnaround and when transporting from one area to another.

Transporting

CAUTION

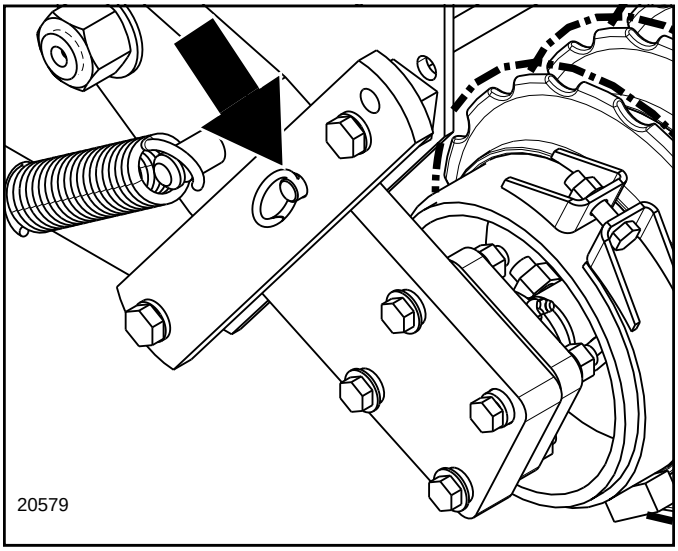
When traveling on public roads whether at night or during the day, use accessory light and devices for adequate warning to operators of other vehicles. Comply with all federal, state and local laws.

1. Select a safe ground travel speed when transporting from one area to another. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.
2. Reduce tractor ground speed when turning. Leave enough clearance so the seeder does not contact obstacles such as buildings, trees or fences.
3. When traveling over rough or hilly terrain, shift tractor to a lower gear.

Parking

The following steps should be done when preparing to store the seeder or unhitch it from the tractor. See also **"Section 5: Maintenance and Lubrication"** on Page 25 for additional information on long term storage of your seeder.

1. Park the seeder on a level, solid area.
2. Shut off tractor engine and engage parking brake.
3. To prevent the seeder from tipping backward, remove rear roller lock pin from storage position and place in parking position. Refer to Figure 2-2.
4. Unhitch from tractor.



Rear Roller Pin Parking Position
Figure 2-2

Drive System

Your Primary Seeder uses standard no. 40 roller chain throughout its drive system. The drive system is simple and designed for low maintenance.

1. Check the drive idler arms to insure that they are taking up any excess chain slack.
2. Check each chain to insure that it is not over-tightened.
3. Annually clean and lubricate chain with chain oil.

Roller Packing Wheels

The front and rear roller packing wheels should turn freely. In field position, the rear roller assembly should be free to float up and down to follow the terrain of your field. See Figure 2-1.

Seed Rate Adjustment

Main Native Grass Box

The setting should be INCREASED for lighter than average seed.

The setting should be DECREASED for heavier than average seed.

For seed not listed on the charts, compare weight and size to those listed and use similar setting.

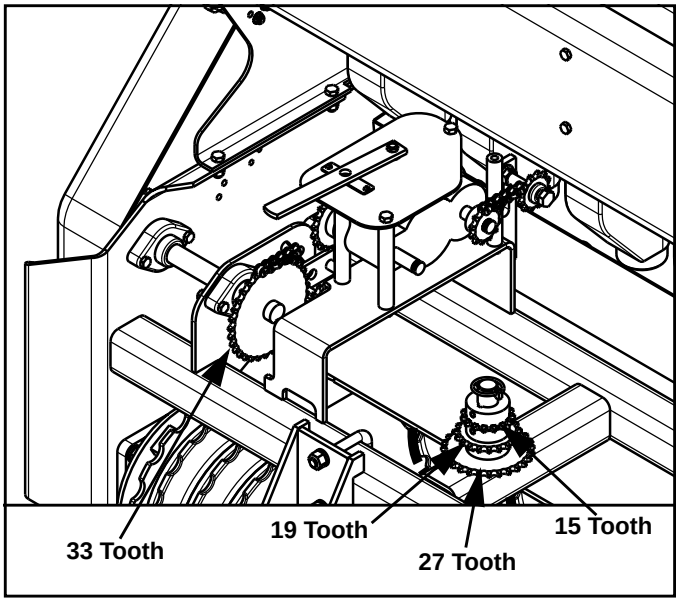
Seed Rate Calibration

1. Raise the seeder & support it in a safe manner so the drive roller assembly will rotate.
2. Partition off the outer end of the box so that seed can be placed only over 3 cups. To adjust your seeding rate, first find the desired pounds/acre on the native grass seed rate chart below. Determine which sprocket is required for Native Grass Box along with proper drive type on the gearbox. Drive types 1, 2, 3, or 4. To change sprockets on the Native Grass Box loosen the chain idler and remove the chain. Loosen the two set screws on the sprocket to remove. Replace with the desired sprocket. (The sprockets are stored on the right hand side of the gearbox.) Set gearbox handle on the proper drive type.
3. Rotate the drive roller assembly to see that the drive system is working properly and that seed cups are free from foreign matter.
4. Place a container under the three seed cups to gather the seed as it is metered.
5. Rotate the drive roller assembly: for 96” seeder - 38 rotations to get 1,000 sq. feet or 1,640 rotations per acre. Be sure to check the three seed cups to make sure each cup has plenty of seed coming into it.
6. Weigh the seed which has been metered. Divide by three. This will give you the ounces/pounds metered by each seed cup. Multiply by the number of the cups on your seeder to arrive at the total pounds per 1,000 square feet your seeder would meter at that setting. If this figure is different than desired, set your feed cup adjustment lever accordingly.

You may want to repeat the calibration procedure if the results of your first calibration vary greatly from the suggested settings contained in the chart.

NOTE: Seeding rates vary greatly with variations in types of seeds being seeded. The seed rate chart below is based on a seed mix of 5.7# of pure live seed per 11.1# of bulk. The pure live seed mix was Big Blue - 1.5#, Little Blue -.8#, Side Oats Grama -.6# Western Wheat Grass - 1#, Switch Grass -.3# and Indian Grass - 1.5#. Factors which will affect seeding rates are: weight of seed, size of seed, relative humidity and moisture content of the seed itself, ratio of inert material to seed, different proportions of seed types affecting density, and ground preparation. WE RECOMMEND THAT YOU TEST AND ADJUST YOUR SEEDER. USE THE PROCEDURES LISTED TO HELP INSURE AN ACCURATE SEEDING RATE.

See Figure 3-1 for sprocket changes.



Native Grass Seed Drive Sprocket
Figure 3-1

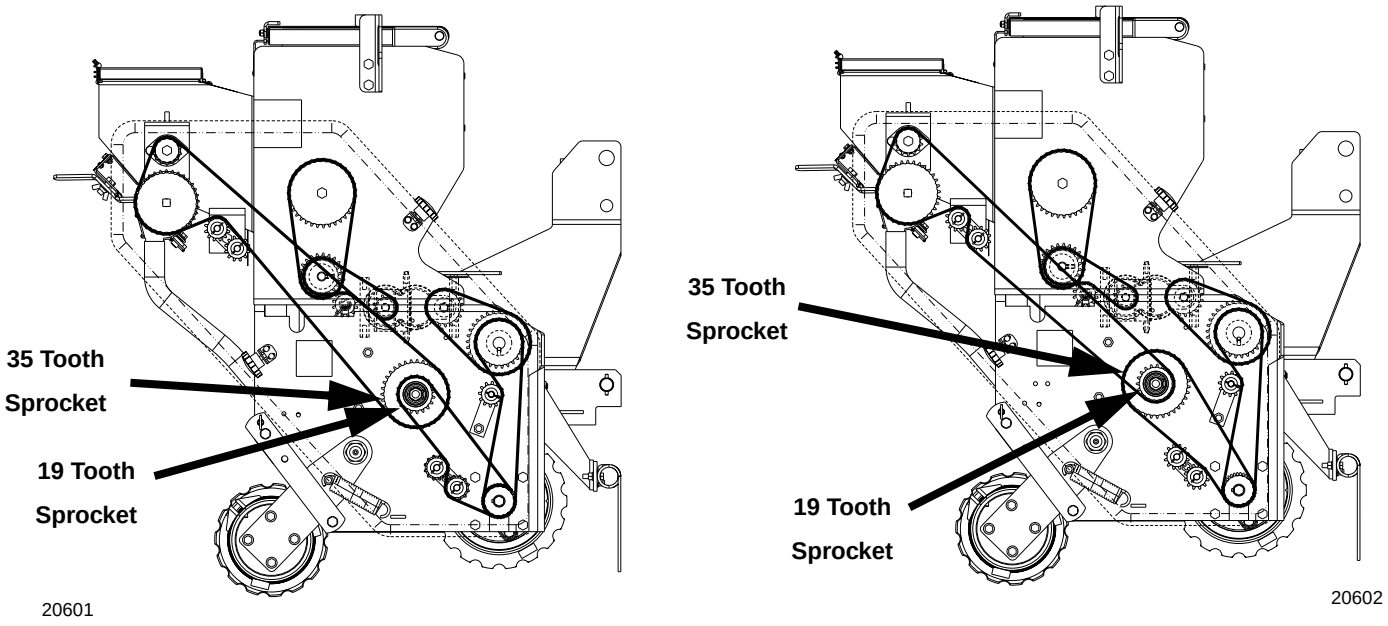
	Seeding Rate (Pounds per acre)			
	Native Grass Seed Drive Sprockets			
	15 Teeth	19 Teeth	27 Teeth	33 Teeth
Gearbox Drive Type				
1	2.8 lbs. per acre	3.5 lbs. per acre	5.0 lbs. per acre	6.2 lbs. per acre
2	5.8 lbs. per acre	7.3 lbs. per acre	10.4 lbs. per acre	12.7 lbs. per acre
3	8.6 lbs. per acre	10.9 lbs. per acre	15.5 lbs. per acre	19.0 lbs. per acre
4	14.1 lbs. per acre	17.8 lbs. per acre	25.4 lbs. per acre	31.0 lbs. per acre

Seed Rate Speed Change

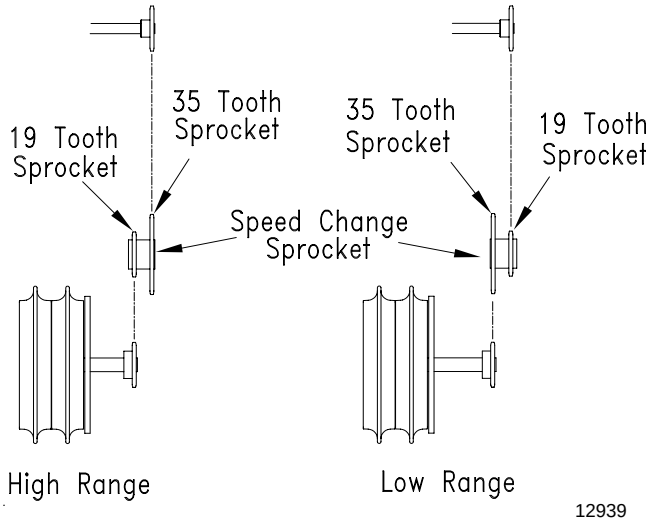
Standard Seed Box Option

The seed rate speed change is designed to give you two speeds for different types of seeds and rates. The two drive types are high range (fast speed) and low range (slow speed). To change the drive type refer to Figure 3-2. Remove 5/8" nut, 5/8" lock washer and 5/8" flat washer. Flip speed change sprocket for desired drive type. Adjust chain idler to tension chain.

See Figure 3-3 for sprocket alignment.



Speed Change & Chain Pitches Standard Seed Box Option
Figure 3-2



Sprocket Alignment
Figure 3-3

Seeding Adjustments

Standard Seed Box Option

Small Seeds Box Option

1. Using the seed rate charts, beginning on page 20, determine the seeding rate for the seed you will be planting and make the following adjustments.
   a. Decide whether you need the slow or fast drive type. Change the speed change sprocket if necessary, to the desired drive type, see Figure 3-2 & Figure 3-3 on page 18.
   b. Locate the seed rate adjustment handle at the rear of the seeder and move it to the indicator number obtained from the charts, see Figure 3-4. For best results, first move adjustment handle all the way to the left. Then move the handle to the desired setting, moving from a lower to a higher number.
2. There are many factors which will affect seeding rates: seed treatment, weight of seed, surface condition of seed or roller slippage. Minor adjustments may be needed to compensate for these factors.
3. The seed rate charts are based on average size seed. This may differ from the seed you are using. Use the seed rate charts as a guide. For lighter than average seed, the setting should be increased. For heavier than average seed, the setting should be decreased.
4. Complete the following procedure to calibrate the rate for your specific seed.
   a. Place several pounds of seed over three of the seed cups at the outboard end of the seeder.
   b. Raise the seeder off the ground and support safely, leaving front roller to rotate freely.

      Rotate the front roller to see that the drive system is working properly and the seed cups are free from foreign matter.

NOTE: A 1/2" bolt is threaded into the right hand end of the front roller shaft. Turn the bolt clockwise for proper seed cup rotation.

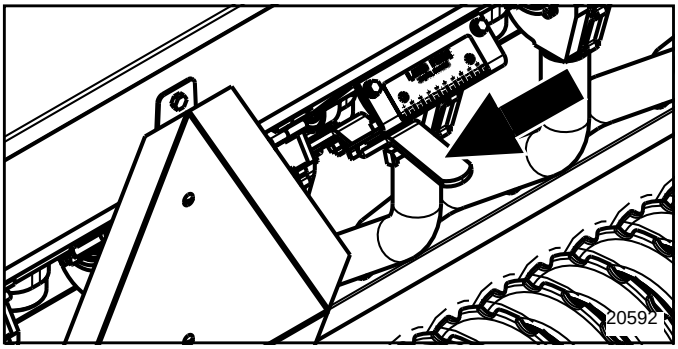
   c. Place a drop cloth under the seeder to gather the seed as it is metered.
   d. Rotate the front roller 38 rotations to get 1000 square feet or 1,640 rotations to get one acre. Be sure to check the three seed cups to make sure each cup has plenty of seed coming into it.
   e. Weigh the seed which has been metered. Divide by three. This will give you the ounces/pounds metered by each seed cup. Convert to pounds and multiply by the number of cups on your seeder to arrive at the total pounds per 1000 square feet your seeder would meter at that setting. If this figure is different than desired, set your seed cup adjustment lever accordingly.
5. You may want to repeat the calibration procedure if the results of your calibration vary greatly from the suggested settings on the chart.

NOTE: To determine seed rates for seeds not listed on the charts, compare weight and size to those listed and use a similar setting. Follow steps 4 and 5 to calibrate the seed rate.

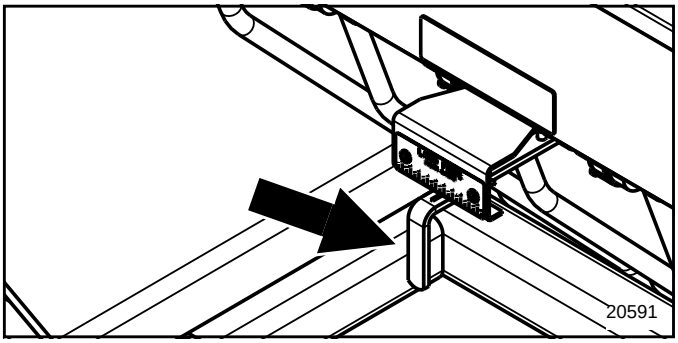
NOTE: This Standard Seed Option is equipped with a four-position door on each seed cup. The highest handle position is for small seeds, the second and third positions are for larger seeds. For application with this seeder, you will only need to use the highest position. MAKE SURE all handles are in the same position before seeding. The wide open position will allow complete clean out of the seed cup.

IMPORTANT: DO NOT open the cup to the wide open position with seed in the box unless complete clean out is desired**.**

REMEMBER: Field conditions will affect seeding rates. When seeding, check the amount of seed you are using by noting acres or square feet seeded, amount of seed added to seeder, and level of seed in the seed box. If you suspect that you are seeding more or less seed than desired, and you have accurately calibrated the seeder to your seed, you may need to adjust the seeding rate slightly to compensate for field conditions.



Standard Seeds Rate Adjustment Handle
Figure 3-4



Small Seeds Rate Adjustment Handle
Figure 3-3

Seed Rate Charts (Small Seed Box Option)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Alfalfa (Pounds per Acre)																					
	0	0	2.82	4.51	6.20	7.75	9.58	11.27	12.68	14.37	16.21	17.76	19.45	21.14	22.55	24.52	26.07	27.62	29.45	31.00	32.55
Alfalfa (Pounds per 1000 Square Feet)																					
	0	0	.06	.10	.14	.18	.22	.26	.29	.33	.37	.41	.45	.49	.52	.56	.60	.63	.68	.71	.75
Sudan Grass (Pounds per Acre)																					
	0	0	0	2.82	4.23	7.89	10.43	13.81	16.35	19.73	22.55	25.36	28.18	31.00	33.82	36.64	39.46	42.56	45.09	47.91	50.73
Sudan Grass (Pounds per 1000 Square Feet)																					
	0	0	0	.06	.10	.18	.24	.32	.38	.45	.52	.58	.65	.71	.78	.84	.91	.98	1.04	1.10	1.16
Turnips - Purple Top (Pounds per Acre)																					
	0	0	2.11	3.95	5.35	7.19	9.30	10.71	12.68	14.66	16.63	18.46	20.57	22.55	24.52	26.77	28.75	30.44	32.69	34.95	37.34
Turnips - Purple Top (Pounds per 1000 Square Feet)																					
	0	0	.05	.09	.12	.16	.21	.25	.29	.34	.38	.42	.47	.52	.56	.61	.66	.70	.75	.80	.86
Orchard Grass (Pounds per Acre)																					
	0	0	0	.28	.85	1.13	1.69	1.97	2.54	3.10	3.66	4.23	4.51	5.07	5.64	6.20	6.48	7.05	7.33	7.89	8.17
Orchard Grass (Pounds per 1000 Square Feet)																					
	0	0	0	.01	.02	.03	.04	.05	.06	.07	.08	.10	.10	.12	.13	.14	.15	.16	.17	.18	.19
Sweet Clover (Pounds per Acre)																					
	0	0	1.97	4.37	6.76	9.16	11.55	14.66	17.05	19.73	21.98	24.52	26.77	29.03	31.56	34.10	36.50	38.89	41.43	43.68	45.94
Sweet Clover (Pounds per 1000 Square Feet)																					
	0	0	.05	.10	.16	.21	.27	.34	.39	.45	.50	.56	.61	.67	.72	.78	.84	.89	.95	1.00	1.05
Ladino Clover (Pounds per Acre)																					
	0	.85	2.25	4.23	6.06	7.75	10.15	12.54	14.94	16.91	18.88	21.14	23.39	25.08	27.06	29.03	30.86	32.97	35.23	37.77	39.46
Ladino Clover (Pounds per 1000 Square Feet)																					
	0	.02	.05	.10	.14	.18	.23	.29	.34	.39	.43	.49	.54	.58	.62	.67	.71	.76	.81	.87	.91
Red Clover (Pounds per Acre)																					
	0	.28	2.54	4.79	7.05	9.30	11.55	14.09	16.35	18.60	20.86	23.11	25.36	27.62	30.16	32.41	34.66	36.92	39.17	41.43	43.97
Red Clover (Pounds per 1000 Square Feet)																					
	0	.01	.06	.11	.16	.21	.27	.32	.38	.43	.48	.53	.58	.63	.69	.74	.80	.85	.90	.95	1.01
Timothy Grass (Pounds per Acre)																					
	0	0	1.41	3.10	4.79	6.76	8.74	10.99	13.25	15.50	17.76	20.01	22.26	24.52	26.77	29.31	31.28	33.82	36.07	38.05	40.30
Timothy Grass (Pounds per 1000 Square Feet)																					
	0	0	.03	.07	.11	.16	.20	.25	.30	.36	.41	.46	.51	.56	.61	.67	.72	.78	.83	.87	.93
Canary Grass (Pounds per Acre)																					
	0	0	1.97	3.80	5.64	7.61	9.58	11.55	13.53	15.50	17.47	19.73	21.98	23.96	26.49	28.46	30.72	32.83	35.23	37.20	39.46
Canary Grass (Pounds per 1000 Square Feet)																					
	0	0	.05	.09	.13	.17	.22	.27	.31	.36	.40	.45	.50	.55	.61	.65	.71	.75	.81	.85	.91
Birdsfoot Trefoil (Pounds per Acre)																					
	0	0	2.25	4.51	7.05	9.86	12.68	15.22	18.04	20.57	23.39	26.21	29.03	31.85	34.66	37.77	40.58	43.40	45.94	48.76	51.57
Birdsfoot Trefoil (Pounds per 1000 Square Feet)																					
	0	0	0.5	.10	.16	.23	.29	.35	.41	.47	.54	.60	.67	.73	.80	.87	.93	1.00	1.05	1.12	1.18
Red Top Grass (Pounds per Acre)																					
	0	0	.85	1.69	2.54	3.95	5.07	6.20	7.05	8.17	9.30	10.15	10.71	11.55	12.12	12.96	13.81	14.94	15.78	16.91	17.76
Red Top Grass (Pounds per 1000 Square Feet)																					
	0	0	.02	.04	.06	.09	.12	.14	.16	.19	.21	.23	.25	.27	.28	.30	.32	.34	.36	.39	.41
Kentucky Blue Grass (Pounds per Acre)																					
	0	0	.28	1.52	2.17	3.72	4.37	5.33	6.12	6.90	7.61	8.40	9.02	9.72	10.40	10.99	11.64	12.29	12.82	13.39	13.95
Kentucky Blue Grass (Pounds per 1000 Square Feet)																					
	0	0	.01	.03	.05	.09	.10	.12	.14	.16	.17	.19	.21	.22	.24	.25	.27	.28	.29	.31	.32

Seed Rate Charts (Standard Seed Box Option)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Alfalfa (Pounds per Acre)																					
High Range	0	54	125	198	269	341	41248	485	555	626	699	769	842	913	985	1056	1129	1199	1270	1343	1413
Low Range	0	17	40	63	85	108	131	154	176	198	221	244	267	289	312	335	358	380	402	425	448
Alfalfa (Pounds per 1000 Square Feet)																					
High Range	0.0	1.2	2.9	4.5	6.2	7.8	9.2	11.1	12.8	14.4	16.1	17.7	19.4	21	22.6	24.3	25.9	27.6	29.2	30.9	32.5
Low Range	0.0	0.4	0.9	1.4	2	2.5	3	3.5	4	4.6	5.1	5.6	6.1	6.6	7.2	7.7	8.2	8.7	9.2	9.8	10.3
Bent Grass (Pounds per Acre)																					
High Range	0	37	80	115	152	185	206	239	265	293	326	358	380	413	439	467	499	528	554	586	619
Low Range	0	17	29	42	54	66	77	89	99	110	122	131	140	149	159	168	175	184	191	198	205
Bent Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.8	2.6	3.5	4.2	4.7	5.5	6.1	6.7	7.5	8.2	8.7	9.5	10.1	11.5	12.1	12.7	12.7	13.5	14.2
Low Range	0.0	0.4	0.7	1	1.2	1.5	1.8	2	2.3	2.5	2.8	3	3.2	3.4	3.6	3.9	4	4.2	4.4	4.5	4.7
Bermuda - Unhulled (Pounds per Acre)																					
High Range	0	61	101	161	206	250	295	341	386	430	475	521	565	610	654	701	745	789	834	880	925
Low Range	0	19	32	51	65	79	93	108	122	136	150	165	179	193	207	222	236	250	264	279	293
Bermuda - Unhulled (Pounds per 1000 Square Feet)																					
High Range	0.0	1.4	2.3	3.7	4.7	5.8	6.8	7.8	8.9	9.9	10.9	12	13	14	15	16.1	17.1	18.1	19.2	20.2	21.3
Low Range	0.0	0.4	0.7	1.2	1.5	1.8	2.1	2.5	2.8	3.1	3.8	3.8	4.1	4.4	4.8	5.1	5.4	5.7	6.1	6.4	6.7
Buffalo Grass Sharps Improved (Pounds per Acre)																					
High Range	0	0	0	22	52	76	106	130	159	185	213	241	259	293	321	352	371	395	417	430	434
Low Range	0	0	0	13	21	29	38	46	56	65	73	83	92	99	109	118	127	134	143	147	150
Buffalo Grass Sharps Improved (Pounds per 1000 Square Feet)																					
High Range	0.0	0	0	0.5	1.2	1.7	2.4	3	3.6	4.2	4.9	5.5	6.2	6.7	7.4	8.1	8.5	9.1	9.6	9.9	10
Low Range	0.0	0	0	0.30	0.5	0.7	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.4	3.5
Clover - Red (Pounds per Acre)																					
High Range	0	77	143	202	263	321	380	438	499	557	616	676	734	793	852	913	971	1030	190	1149	1207
Low Range	0	24	45	64	83	102	120	139	158	177	195	214	233	251	270	289	308	326	346	364	383
Clover - Red (Pounds per 1000 Square Feet)																					
High Range	0.0	1.8	3.3	4.6	6	7.4	8.7	1.1	11.5	12.8	14.2	15.5	16.9	18.2	19.6	21	22.3	23.7	25.1	26.4	27.8
Low Range	0.0	0.6	1	1.5	1.9	2.3	2.8	3.2	3.6	4.1	4.5	4.9	5.4	5.8	6.2	6.6	7.1	7.5	7.9	8.4	8.8
Clover - White (Pounds per Acre)																					
High Range	0	77	151	224	297	372	444	517	592	664	737	812	884	957	1032	1104	1177	1252	1324	1397	1472
Low Range	0	24	48	71	94	118	141	164	187	211	234	257	280	303	327	350	373	397	420	443	466
Clover - White (Pounds per 1000 Square Feet)																					
High Range	0.0	1.8	3.5	5.2	6.8	8.5	10.2	11.9	13.6	15.3	16.9	18.7	20.3	22	23.7	25.4	27.1	28.8	30.4	32.1	33.8
Low Range	0.0	0.6	1.1	1.6	2.2	2.7	3.2	3.8	4.3	4.8	5.4	5.9	6.4	7	7.5	8	8.6	9.1	9.6	10.2	10.7
Fescue - Fine Blade, Turf Type (Pounds per Acre)																					
High Range	0	20	46	75	103	131	160	188	216	242	271	299	327	355	384	412	440	468	497	525	553
Low Range	0	6	15	24	33	42	51	60	69	77	86	95	104	113	122	131	140	148	157	166	175
Fescue - Fine Blade, Turf Type (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	1.1	1.7	2.4	3	3.7	4.3	5	5.6	6.2	6.9	7.5	8.2	8.8	9.5	10.1	10.8	11.4	12.1	12.7
Low Range	0.0	0.1	0.3	0.5	0.7	1	1.2	1.4	1.6	1.8	2	2.2	2.4	2.6	2.8	3	3.2	3.4	3.6	3.8	4
Fescue K-31 (Pounds per Acre)																					
High Range	0	0	21	50	83	113	140	165	186	223	243	272	305	328	355	382	48	433	439	450	454
Low Range	0	0	6	15	26	35	44	51	58	69	76	84	95	102	110	118	127	134	136	140	141
Fescue K-31 (Pounds per 1000 Square Feet)																					
High Range	0.0	0.0	0.5	1.1	1.9	2.6	3.2	3.8	4.3	5.1	5.6	6.3	7	7.5	8.2	8.8	9.4	10	10.1	10.3	10.4
Low Range	0.0	0.0	0.1	0.4	0.6	0.8	1	1.2	1.3	1.6	1.7	1.9	2.2	2.3	2.5	2.7	2.9	3.1	3.1	3.2	3.2
Kentucky Blue Grass (Pounds per Acre)																					
High Range	0	23	48	73	103	125	155	178	205	227	250	274	293	322	334	365	387	406	426	442	455
Low Range	0	8	16	24	34	41	51	58	67	74	82	90	96	106	109	119	127	133	140	145	149
Kentucky Blue Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	1.1	1.7	2.4	2.9	3.6	4.1	4.7	5.2	5.7	6.3	6.7	7.4	7.7	8.4	8.9	9.3	9.8	10.1	10.5
Low Range	0.0	0.2	0.4	0.5	0.8	0.9	1.2	1.3	1.5	1.7	1.9	2.1	2.2	2.4	2.5	2.7	2.9	3.1	3.2	3.3	3.4
Lovegrass - Sand (Pounds per Acre)																					
High Range	0	89	140	191	242	293	343	394	445	496	547	598	649	700	751	802	852	925	977	1029	1081
Low Range	0	28	44	61	77	93	109	125	141	157	173	189	206	222	238	254	270	286	302	319	335

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Lovegrass - Sand (Pounds per 1000 Square Feet)																					
High Range	0.0	2	3.2	4.4	5.6	6.7	7.9	9.1	10.2	11.4	12.6	13.7	14.9	16.1	17.3	18.4	19.6	21.3	22.5	23.7	24.9
Low Range	0.0	0.6	1	1.4	1.8	2.1	2.5	2.9	3.2	3.6	4	4.4	4.7	5.1	5.5	5.8	6.2	6.6	6.9	7.3	7.7
Lovegrass - Weeping (Pounds per Acre)																					
High Range	0	109	176	226	287	343	396	448	501	553	606	658	711	763	816	868	921	973	1026	1078	1133
Low Range	0	35	56	72	91	109	125	142	159	175	192	209	225	242	259	275	292	308	325	342	359
Lovegrass - Weeping (Pounds per 1000 Square Feet)																					
High Range	0.0	2.5	4	5.2	6.6	7.9	9.1	10.3	11.5	12.7	13.9	15.1	16.3	17.5	18.7	20	21.2	22.4	23.6	24.8	26
Low Range	0.0	0.8	1.3	1.6	2.1	2.5	2.9	3.3	3.6	4	4.4	4.8	5.2	5.6	5.9	6.3	6.7	7.1	7.5	7.8	8.2
Orchard Grass (Pounds per Acre)																					
High Range	0	4	6	10	15	20	27	34	41	49	58	66	75	85	94	103	112	121	130	138	146
Low Range	0	1	2	3	5	7	9	12	15	18	22	25	29	33	36	40	44	48	51	55	58
Orchard Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.3	1.5	1.7	1.9	2.2	2.4	2.6	2.8	3.0	3.2	3.3
Low Range	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3
Rye Grass - Annual (Pounds per Acre)																					
High Range	0	21	59	95	131	168	204	242	279	315	351	388	426	462	499	535	573	610	646	682	719
Low Range	0	7	19	30	42	53	65	77	88	100	111	123	135	147	158	170	182	193	205	216	228
Rye Grass - Annual (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	1.3	2.2	3	3.9	4.7	5.6	6.4	7.2	8.1	8.9	9.8	10.6	11.5	12.3	13.2	14	14.9	15.7	16.5
Low Range	0.0	0.2	0.4	0.7	1	1.2	1.5	1.8	2	2.3	2.6	2.8	3.1	3.4	3.6	3.9	4.2	4.4	4.7	5	5.2
Rye Grass - Perennial (Pounds per Acre)																					
High Range	0	36	77	115	156	196	234	275	315	353	394	434	475	513	553	594	632	672	713	751	791
Low Range	0	12	24	37	49	62	74	87	100	112	125	138	150	163	175	188	200	213	226	238	251
Rye Grass - Perennial (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.8	2.6	3.6	4.5	5.4	6.2	7.2	8.1	9	10	10.9	11.8	12.7	13.6	14.5	15.5	16.4	17.3	18.2
Low Range	0.0	0.3	0.6	0.8	1.1	1.4	1.7	2	2.3	2.6	2.9	3.2	3.5	3.7	4	4.3	4.6	4.9	5.2	5.5	5.8
Sudan Grass (Pounds per Acre)																					
High Range	0	35	68	103	141	179	220	262	306	352	398	446	495	545	596	648	701	754	808	862	916
Low Range	0	18	28	41	55	71	89	107	127	147	168	189	210	231	252	271	290	308	325	339	352
Sudan Grass (Pounds per 1000 Square Feet)																					
High Range	0.0	0.8	1.6	2.4	3.2	4.1	5.1	6.0	7.0	8.1	9.1	10.2	11.4	12.5	13.7	14.9	16.1	17.3	18.5	19.8	21.0
Low Range	0.0	0.4	0.6	0.9	1.3	1.6	2.0	2.5	2.9	3.4	3.9	4.3	4.8	5.3	5.8	6.2	6.7	7.1	7.5	7.8	8.1
Vetch (Pounds per Acre)																					
High Range	0	78	135	191	245	302	358	415	471	525	582	638	695	749	805	862	918	973	1029	1089	1142
Low Range	0	21	38	56	73	90	108	125	142	159	177	194	211	228	246	263	280	298	315	333	350
Vetch (Pounds per 1000 Square Feet)																					
High Range	0.0	1.8	3.1	4.4	5.6	6.9	8.2	9.5	10.8	12.1	13.4	14.7	16	17.2	18.5	19.8	21.1	22.4	23.7	25.1	26.2
Low Range	0.0	0.5	0.9	1.3	1.7	2.1	2.5	2.9	3.3	3.7	4.1	4.5	4.9	5.2	5.6	6	6.4	6.9	7.2	7.6	8
Wheatgrass - Crested (Pounds per Acre)																					
High Range	0	22	36	51	67	81	95	111	125	139	153	170	184	198	214	228	242	258	273	287	301
Low Range	0	7	12	16	21	26	30	35	40	44	49	54	58	63	68	72	77	82	86	91	95
Wheatgrass - Crested (Pounds per 1000 Square Feet)																					
High Range	0.0	0.5	0.8	1.2	1.5	1.9	2.2	2.6	2.9	3.2	3.5	3.9	4.2	4.5	4.9	5.2	5.6	5.9	6.3	6.6	6.9
Low Range	0.0	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.6	1.7	1.8	1.9	2	2.1	2.2
Wheatgrass - Western (Pounds per Acre)																					
High Range	0	7	24	41	58	76	93	110	127	144	161	179	196	213	230	247	265	282	299	316	333
Low Range	0	2	8	13	19	24	29	35	44	46	51	57	62	67	73	78	84	89	95	100	106
Wheatgrass - Western (Pounds per 1000 Square Feet)																					
High Range	0.0	0.2	0.5	0.9	1.3	1.7	2.1	2.5	2.9	3.3	3.7	4.1	4.5	4.9	5.3	5.7	6.1	6.5	6.9	7.3	7.7
Low Range	0.0	0.0	0.2	0.3	0.4	0.5	0.7	0.8	0.9	1	1.2	1.3	1.4	1.5	1.7	1.8	1.9	2.1	2.2	2.3	2.4

Seed Rate Charts (Metric) (Standard Seed Box)

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Alfalfa (Kilograms per Hectare)																					
High Range	0	60	140	222	301	382	461	543	621	700	782	860	942	1021	1102	1181	1263	1341	1421	1503	1581
Low Range	0	19	45	70	95	121	147	172	197	222	247	273	299	323	349	375	401	425	450	475	501
Alfalfa (Kilograms per 1000 Square Meters)																					
High Range	0	6	14	22	30	38	45	54	62	70	79	86	95	103	110	119	126	135	143	151	159
Low Range	0	2	4	7	10	12	15	17	20	22	25	27	30	32	35	38	40	42	45	48	50
Bent Grass (Kilograms per Hectare)																					
High Range	0	41	90	129	170	207	230	267	296	328	365	401	425	462	491	522	558	591	620	656	693
Low Range	0	19	32	47	60	74	86	100	111	123	136	147	157	167	178	188	196	206	214	222	229
Bent Grass (Kilograms per 1000 Square Meters)																					
High Range	0	4	9	13	17	21	23	27	30	33	37	40	42	46	49	56	59	62	62	66	69
Low Range	0	2	3	5	6	7	9	10	11	12	14	15	16	17	18	19	20	21	21	22	23
Bermuda (Kilograms per Hectare)																					
High Range	0	68	113	180	230	280	330	382	432	481	531	583	632	682	732	784	834	883	933	985	1035
Low Range	0	21	36	57	73	88	104	121	136	152	168	185	200	216	232	248	264	280	295	312	328
Bermuda (Kilograms per 1000 Square Meters)																					
High Range	0	7	11	18	23	28	33	38	43	48	53	59	63	68	73	79	83	88	94	99	104
Low Range	0	2	3	6	7	9	10	12	14	15	19	19	20	21	23	25	26	28	30	31	33
Buffalo Grass (Kilograms per Hectare)																					
High Range	0	0	0	25	58	85	119	145	178	207	238	270	290	328	359	394	415	442	467	481	486
Low Range	0	0	0	15	23	32	43	51	63	73	82	93	103	111	122	132	142	150	160	164	168
Buffalo Grass (Kilograms per 1000 Square Meters)																					
High Range	0	0	0	2	6	8	12	15	18	21	24	27	30	33	36	40	42	44	47	48	49
Low Range	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17
Clover - Red (Kilograms per Hectare)																					
High Range	0	86	160	226	294	359	425	490	558	623	689	756	821	887	953	1021	1086	1152	1219	1286	1350
Low Range	0	27	50	72	93	114	134	156	177	198	218	239	261	281	302	323	345	365	387	407	429
Clover - Red (Kilograms per 1000 Square Meters)																					
High Range	0	9	16	22	29	36	42	49	56	62	69	76	83	89	96	103	109	116	123	129	136
Low Range	0	3	5	7	9	11	14	16	18	20	22	24	26	28	30	32	35	37	39	41	43
Clover - White (Kilograms per Hectare)																					
High Range	0	86	169	251	332	416	497	578	662	743	825	908	989	1071	1155	1235	1317	1401	1481	1563	1647
Low Range	0	27	54	79	105	132	158	183	209	236	262	288	313	339	366	392	417	444	470	496	521
Clover - White (Kilograms per 1000 Square Meters)																					
High Range	0	9	17	25	33	42	50	58	66	75	83	91	99	107	116	124	132	141	148	157	165
Low Range	0	3	5	8	11	13	16	19	21	23	26	29	31	34	37	39	42	44	47	50	52
Fescue - Fine Blade, Turf Type (Kilograms per Hectare)																					
High Range	0	22	51	84	115	147	179	210	242	271	303	335	366	397	430	461	492	524	556	587	619
Low Range	0	7	17	27	37	47	57	67	77	86	96	106	116	126	136	147	157	166	176	186	196
Fescue - Fine Blade, Turf Type (Kilograms per 1000 Square Meters)																					
High Range	0	2	5	8	12	15	18	21	24	27	30	34	37	40	43	46	49	53	56	59	62
Low Range	0	0	1	2	3	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Fescue K-31(Kilograms per Hectare)																					
High Range	0	0	23	56	93	126	157	185	208	249	272	304	341	367	397	427	456	484	491	503	508
Low Range	0	0	7	17	29	39	49	57	65	77	85	94	106	114	123	132	142	150	152	157	158
Fescue K-31 (Kilograms per 1000 Square Meters)																					
High Range	0	0	2	5	9	13	16	19	21	25	27	31	34	37	40	43	46	49	49	50	51
Low Range	0	0	0	5	3	4	5	6	6	8	8	9	11	11	12	13	14	15	15	16	16
Kentucky Blue Grass (Kilograms per Hectare)																					
High Range	0	26	54	82	115	140	173	199	229	254	280	307	328	360	374	408	433	454	477	495	509
Low Range	0	9	18	27	38	46	57	65	75	83	92	101	107	119	122	133	142	149	157	162	167
Kentucky Blue Grass (Kilograms per 1000 Square Meters)																					
High Range	0	2	5	8	12	14	18	20	23	25	28	31	33	36	38	41	43	45	48	49	51
Low Range	0	1	2	2	4	4	6	6	7	8	9	10	11	12	12	13	14	15	16	16	17
Lovegrass - Sand (Kilograms per Hectare)																					
High Range	0	100	157	214	271	328	384	441	498	555	612	669	726	783	840	897	953	1035	1093	1151	1209
Low Range	0	31	49	68	86	104	122	140	158	176	194	211	230	248	266	284	302	320	338	357	375
Lovegrass - Sand (Kilograms per 1000 Square Meters)																					
High Range	0	10	16	21	27	33	39	44	50	56	62	67	73	79	84	90	96	104	110	116	122
Low Range	0	3	5	7	9	10	12	14	16	18	20	21	23	25	27	28	30	32	34	36	38

Cup Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Lovegrass - Weeping (Kilograms per Hectare)																					
High Range	0	122	197	253	321	384	443	501	561	619	678	736	795	854	913	971	1030	1089	1148	1206	1268
Low Range	0	39	63	81	102	122	140	159	178	196	215	234	252	271	290	308	327	345	364	383	402
Lovegrass - Weeping (Kilograms per 1000 Square Meters)																					
High Range	0	12	20	25	32	39	44	50	56	62	68	74	80	85	91	98	104	109	115	121	127
Low Range	0	4	6	8	10	12	14	16	18	20	21	23	25	27	29	31	33	35	37	38	40
Orchard Grass (Kilograms per Hectare)																					
High Range	0	4	7	11	17	23	30	38	46	55	65	74	84	95	105	115	126	136	145	155	164
Low Range	0	1	2	4	5	8	10	14	17	20	24	28	32	37	41	45	49	53	57	61	65
Orchard Grass (Kilograms per 1000 Square Meters)																					
High Range	0	0	1	1	2	2	3	4	5	6	6	7	8	9	11	12	13	14	15	15	16
Low Range	0	0	0	0	1	1	1	1	2	2	2	3	3	4	4	5	5	5	6	6	6
Rye Grass - Annual (Kilograms per Hectare)																					
High Range	0	23	66	106	147	188	228	271	312	352	393	434	477	517	558	599	641	682	723	763	804
Low Range	0	8	21	34	47	59	73	86	98	112	124	138	151	164	177	190	204	216	229	242	255
Rye Grass - Annual (Kilograms per 1000 Square Meters)																					
High Range	0	2	6	11	15	19	23	27	31	35	40	43	48	52	56	60	64	68	73	77	81
Low Range	0	1	2	3	5	6	7	9	10	11	13	14	15	17	18	19	21	21	23	24	25
Rye Grass - Perennial (Kilograms per Hectare)																					
High Range	0	40	86	129	175	219	262	308	352	395	441	486	531	574	619	665	707	752	798	840	885
Low Range	0	13	27	41	55	69	83	97	112	125	140	154	168	182	196	210	224	238	253	266	281
Rye Grass - Perennial (Kilograms per 1000 Square Meters)																					
High Range	0	4	9	13	18	22	26	30	35	40	44	49	53	58	62	66	71	76	80	84	89
Low Range	0	1	3	4	5	7	8	10	11	13	14	16	17	18	20	21	22	24	25	27	28
Sudan Grass (Kilograms per Hectare)																					
High Range	0	39	77	116	157	201	247	294	343	394	446	500	555	611	668	726	785	845	905	966	1027
Low Range	0	20	32	46	62	80	99	120	142	165	188	212	236	259	282	304	325	345	364	380	395
Sudan Grass (Kilograms per 1000 Square Meters)																					
High Range	0	4	8	12	16	20	25	29	34	39	45	50	56	61	67	73	79	84	91	97	103
Low Range	0	2	3	5	6	8	10	12	14	16	19	21	24	26	28	30	33	35	36	38	39
Vetch (Kilograms per Hectare)																					
High Range	0	87	151	214	274	338	401	464	527	587	651	714	778	838	901	964	1027	1089	1151	1218	1278
Low Range	0	23	43	63	82	101	121	140	159	178	198	217	236	255	275	294	313	333	352	373	392
Vetch (Kilograms per 1000 Square Meters)																					
High Range	0	9	15	21	27	34	40	46	53	59	65	72	78	84	90	97	103	109	116	123	128
Low Range	0	2	4	6	8	10	12	14	16	18	20	22	24	25	27	29	31	34	35	37	39
Wheatgrass - Crested (Kilograms per Hectare)																					
High Range	0	25	40	57	75	91	106	124	140	156	171	190	206	222	239	255	271	289	305	321	337
Low Range	0	8	13	18	23	29	34	39	45	49	55	60	65	70	76	81	86	92	96	102	106
Wheatgrass - Crested (Kilograms per 1000 Square Meters)																					
High Range	0	2	4	6	7	9	11	13	14	16	17	19	21	22	24	25	27	29	31	32	34
Low Range	0	1	1	2	2	3	3	4	4	5	5	6	6	7	8	8	9	9	10	10	11
Wheatgrass - Western (Kilograms per Hectare)																					
High Range	0	8	27	46	65	85	104	123	142	161	180	200	219	238	257	276	296	316	335	354	373
Low Range	0	2	9	15	21	27	32	39	45	51	57	64	69	75	82	87	94	100	106	112	119
Wheatgrass - Western (Kilograms per 1000 Square Meters)																					
High Range	0	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
Low Range	0	0	1	1	2	2	3	4	4	5	6	6	7	7	8	9	9	10	11	11	12

Maintenance

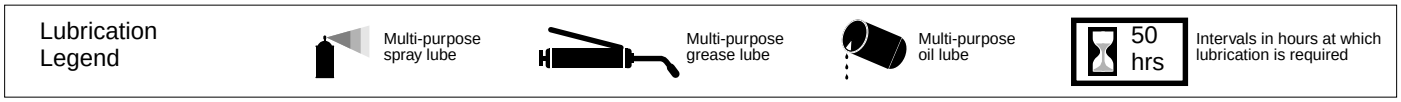
Proper servicing and adjustment is the key to the long life of any implement. With careful and systematic inspection, you can avoid costly maintenance, time and repair.

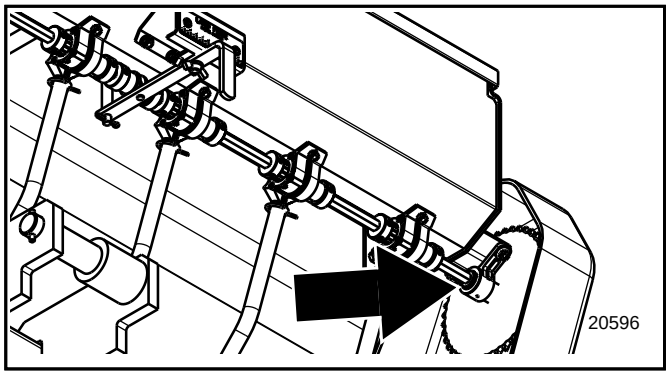
6. After using your seeder for several hours, check all bolts to be sure they are tight.
7. After transporting your seeder for several hours, check all bolts and nuts to be sure they are tight.

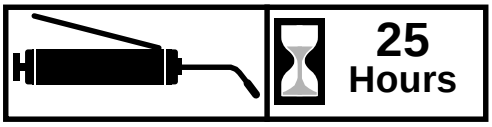
Storage

1. At the end of the working season or when your Primary Seeder will not be used for a long period, it is good practice to clean off any dirt or grease that may have accumulated on the seeder and any of the moving parts.
2. Be sure that the seed box is completely cleaned before storing.
3. Place Rear Roller Pin in Parking position. (See Figure 2-2, page 15.)
4. The square bore of the seed cup drive sprocket hub should be oiled to prevent seizing. Squirt oil on to the square feed cup shaft and move seed cup adjustment lever back and forth in order to get the oil back into the square.
5. Lubricate all fittings as indicated.
6. When in storage, lower the seeder with rollers on a board or hard surface and adjust the parking stand or tongue jack.
7. Repaint parts where paint is worn or scratched to prevent rust.
8. Replace all damaged or missing decals.
9. Store the seeder inside if possible. Inside storage will reduce maintenance and make for a longer seeder life.
10. Inspect the Primary Seeder for loose, damaged or worn parts and adjust or replace if needed.

Lubrication







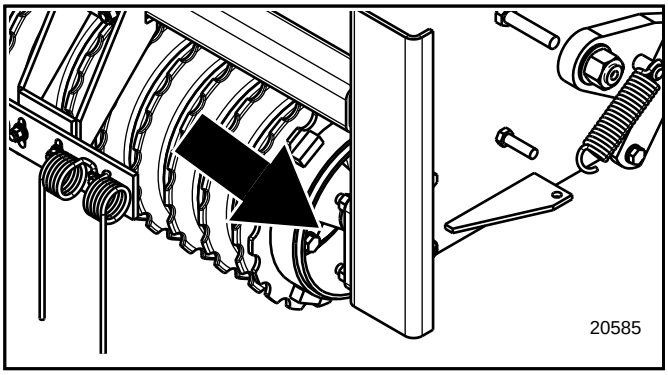
Drive Sprocket Hanger Bearing

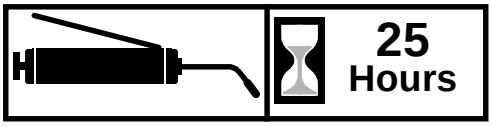
(Small Grass Seeds Box)

Type of Lubrication: Multi-Purpose

Quantity = Coat sprocket bore thoroughly; move seed-rate handle back and forth to get oil into sprocket bore.

IMPORTANT: DO NOT use petroleum lubricant on the plastic seed cups. Petroleum will absorb into the plastic and swell the plastic components.

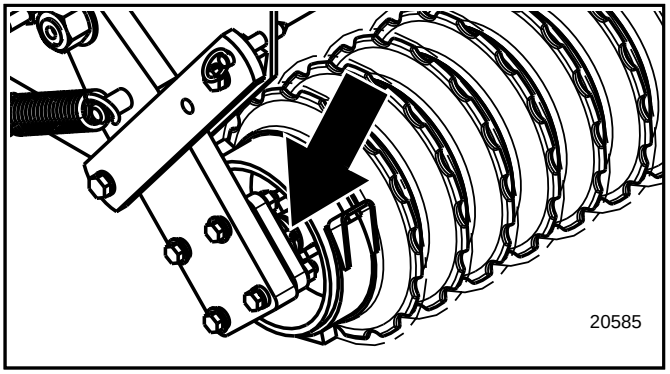


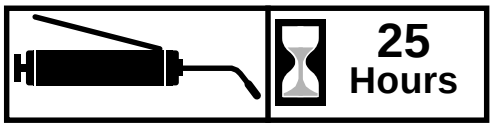


Roller Bearings

Type of Lubrication: Multi-Purpose

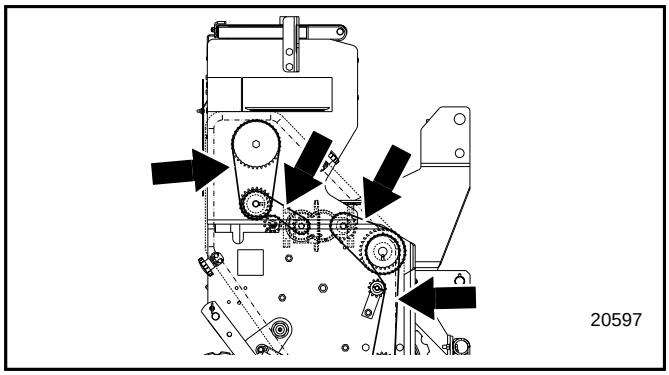
Quantity = Coat Generously





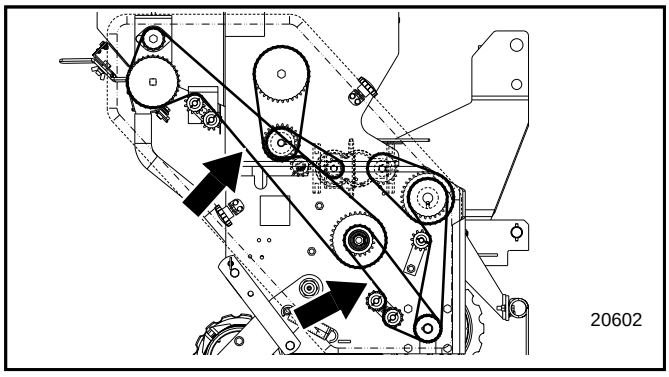
Roller Bearings

Type of Lubrication: Multi-Purpose
Quantity = Coat Generously



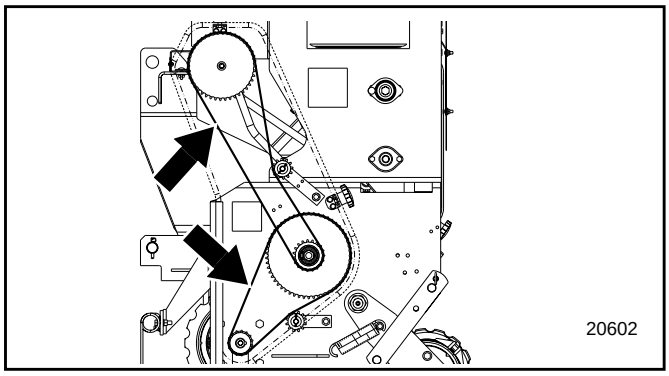
Roller Chains (4 chains)

Type of Lubrication: Chain Lubricant
Quantity = Generously



Roller Chains
(Standard Seed Box Option)

Type of Lubrication: Chain Lubricant
Quantity = Generously



Roller Chains

(Small Seed Box Option)

Type of Lubrication: Chain Lubricant

Quantity = Generously

Gearbox

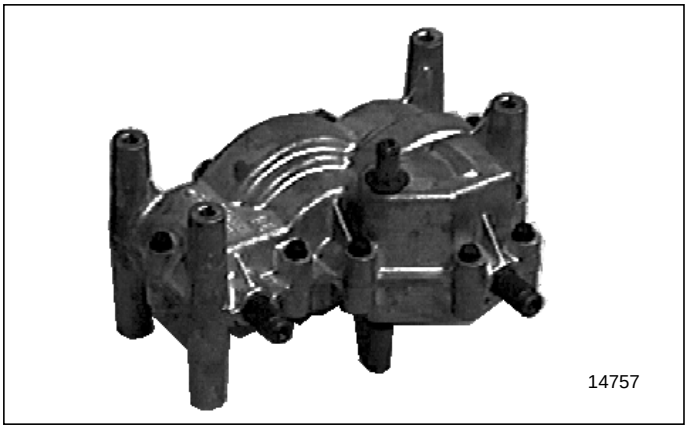
The gearbox is lubricated and sealed at the factory. Under normal conditions, it does not require maintenance or lubrication.

If the gearbox has been opened for repair, repack all gears and around shaft bearings using at least 7 oz. of gear lube, Part No. 788067.

Keep moisture and dirt out of gearbox. Inspect (replace if needed) the rubber seals on gearbox drive and shifter shafts.

Spread a small skin coat of anaerobic sealant (Loctite 525 or equivalent) to gear case mating surfaces before bolting them back together.

IMPORTANT: Use sparingly. Excess sealant may squeeze off the intended surface and lock bearings or gears.



PSN20 Series Primary Seeder	
Model PSN2096 (Base Unit)	
Overall Width	9’ 4”
Seeding Width	8’ 6”
Height	45”
Overall Length	42 1/2”
Empty Weight	1810 lbs. (Includes base unit with standard seeds box and small seeds box)
Minimum HP Required	See tractor’s 3-point hitch and/or capacity
Maximum HP	Cat. 3 Tractor
Main Seedbox Construction	Continuous welded, 14 gauge steel
Lid construction	Heavy duty precision fit with seed splash guard
Main Seedbox Capacity	8 1/2 bushels
Seed Cup Drive	Chain Driven from right side of front roller
Seed Cup Agitation	Chain driven paddle type agitators above seed cups
Number of Seed Cups	14
Seed Settings	Wide range of calibration
Seed Drop	Wind guarded
Track Removers	Double torsion spring height adjustable and replaceable, Two each
Packer Wheels- Front	12” OD notched, cast iron, 42 each with 1 1/2” sealed greaseable bearings
Packer Wheels- Rear	9 1/2” OD notched, cast iron, 43 each with free floating mounting tube and 1” greaseable bearing mounted on pivoting spring loaded arms
Hitch	Category 2 & 3; Quick-Hitch Adaptable, See optional pull-type hitch below

Optional Add-on Seed Boxes	
Standard Seeds box	5 bushels capacity with: • Chain driven seed cups. • Chain driven paddle type agitators above seed cups.
Small Seeds Box	2 bushels capacity with: • Chain driven seed cups.

Optional Pull Type Hitch	
Wheel Base	69” Center to Center
Length	95”
Hook-Up	Quick Attach Type Hook-Up
Tires - 2 ea.	9.5” L X 15” 12 Ply Tires
Cylinders	4” X 14” with Transport Lock valve
Tongue Jack	Standard
Weight (Approximate Pounds)	720 lbs.

PSN20 Series Primary Seeder

Features	Benefits
Cat. 2 & 3, Cat. 2 Quick-Hitch adaptable	Cat. 2 & 3 offers a wide variety of tractors, Cat. 2 Quick-Hitch allows for easy connecting and disconnecting.
Seeding width	8’ 6” Seeding width is just right for small acreage, roadside native grass work, and small turf farms.
Native Grass model	Native Grass model allows the user who works primarily with native grasses to use the main box for native grass seed.
Seedbox construction	All-welded seedbox construction prevents twisting from uneven ground, offers years of service.
Water tight lids	All boxes have precision fitting lids to keep seeds dry and rodents out.
Native grass main box	1 Bushel per foot (8 1/2 bushel) capacity keeps filling to a minimum, Increases productivity.
Native grass seed cup	Large aluminum seed cup with aggressive picker wheel is used on Native Grass main box.
Native grass agitator	Native Grass main box uses an aggressive paddle style agitator to keep the fluffy native grass from bridging.
Cast iron packer wheels	12” diameter front rings and 9” diameter rear rings are used to crush the clods and pack the seed in to promote seed to soil contact.
Spring mounted rear packers	Rear packer wheels are spring loaded for additional down pressure, and to stay in contact with the ground.
Adjustable track removers	Spring tine track removers effectively scratch out the tracks from the tractor tires.
#40 Roller chain	All drives utilize #40 roller chain for smooth running.
4-Speed transmission	Easy and fast speed change, saves time from removing chains.

Optional Features (PSN20 Primary Seeder)

Features	Benefits
Standard seeds box	A .6 bushel per foot standard seed box can be bolted to the front of the main box for seeding turf grass seeds. • Seed cups are powder metal flutes for accurate seed rates. • Seed agitator is paddle style to keep seeds from bridging.
Small seeds box	A bolt-on Small Seeds Box can be added to the rear of the main box to mix small seeds in with other types, allowing them to be seeded at rates that compliment each other.
Pull type hitch	Allows for easier hook-up to tractor, adaptable to smaller tractors.

Problem	Solution
Uneven seed spacing or uneven stand.	Check for plugging in seed cup.
	Reduce ground speed.
	Check for trash or mud build-up on rollers.
Actual seeding rate is different than desired.	Seed treatment will affect seeding rate if the chemicals build-up in seed cup. Unless cleaned regularly, this build-up can cause breakage of the seed cup shaft.
Feed cup sprocket locked up or twisted feed cup drive shaft.	Check for foreign matter lodged in seed cup sprocket.
Rollers not turning freely.	Check for trash or mud build-up on roller end.

Torque Values Chart For Common Bolt Size

Bolt Size (Inches)	Bolt Head Identification: Grade 2		Grade 5		Grade 8	
in-tpi [1]	N · m	ft-lb [3]	N · m	ft-lb	N · m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12
1/4" - 28	8.5	6	13	10	18	14
5/16" - 18	15	11	24	17	33	25
5/16" - 24	17	13	26	19	37	27
3/8" - 16	27	20	42	31	59	44
3/8" - 24	31	22	47	35	67	49
7/16" - 14	43	32	67	49	95	70
7/16" - 20	49	36	75	55	105	78
1/2" - 13	66	49	105	76	145	105
1/2" - 20	75	55	115	85	165	120
9/16" - 12	95	70	150	110	210	155
9/16" - 18	105	79	165	120	235	170
5/8" - 11	130	97	205	150	285	210
5/8" - 18	150	110	230	170	325	240
3/4" - 10	235	170	360	265	510	375
3/4" - 16	260	190	405	295	570	420
7/8" - 9	225	165	585	430	820	605
7/8" - 14	250	185	640	475	905	670
1" - 8	340	250	875	645	1230	910
1" - 12	370	275	955	705	1350	995
1-1/8" - 7	480	355	1080	795	1750	1290
1 1/8" - 12	540	395	1210	890	1960	1440
1 1/4" - 7	680	500	1520	1120	2460	1820
1 1/4" - 12	750	555	1680	1240	2730	2010
1 3/8" - 6	890	655	1990	1470	3230	2380
1 3/8" - 12	1010	745	2270	1670	3680	2710
1 1/2" - 6	1180	870	2640	1950	4290	3160
1 1/2" - 12	1330	980	2970	2190	4820	3560

Bolt Size (Metric)	Bolt Head Identification: 5.8 Class 5.8		8.8 Class 8.8		10.9 Class 10.9	
mm x pitch [4]	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	l215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

[1] in-tpi = nominal thread diameter in inches-threads per inch

[2] N· m = newton-meters

[3] ft-lb= foot pounds

[4] mm x pitch = nominal thread diameter in millimeters x thread pitch

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

NOTES:

Warranty

Land Pride warrants to the original purchaser that this Land Pride product will be free from defects in material and workmanship beginning on the date of purchase by the end user according to the following schedule when used as intended and under normal service and conditions for personal use.

Overall Unit: One year Parts and Labor

Packer Wheels: Considered wear items

Optional Pull Tongue: One year Parts and Labor

This Warranty is limited to the replacement of any defective part by Land Pride and the installation by the dealer of any such replacement part, and does not cover common wear items. Land Pride reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Land Pride's judgment shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. Misuse also specifically includes failure to properly maintain oil levels, grease points, and driveline shafts.

Claims under this Warranty should be made to the dealer which originally sold the product and all warranty adjustments must be made through an authorized Land Pride dealer. Land Pride reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Land Pride liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, Land Pride shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Land Pride within 30 days from the date of purchase by the end user.

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